

THE RELATIONSHIP BETWEEN
TEACHER BELIEF SYSTEMS AND TEACHER EFFECTIVENESS

By

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by

Karen Joy Agne

This dissertation is dedicated
to Mother, whose love, and trust
in the paths of her children was always
unconditional, unlimited, and unceasing,
and
to Kori and Darrin, my beloved children,
who are my constant inspiration
and reason for striving.

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The purpose of this study was to examine whether teachers, chosen as Teachers of the Year (TOY), differed from inservice teachers (IT) in terms of four teacher belief systems related to teacher effectiveness: (a) teacher efficacy, (b) teacher locus of control, (c) pupil control, and (d) teacher stress, and whether these beliefs were related to teachers' gender, years of teaching experience, grade level taught, or highest degree earned.

A sample of Teachers of the Year ($n = 88$) and a comparison sample of inservice teachers ($n = 92$) completed a composite teacher belief questionnaire consisting of four teacher belief instruments: the Teacher Efficacy Scale (TES), the Teacher Locus of Control Scale (TLC), the Pupil Control Ideology Form (PCI), and the Wilson Stress Profile for Teachers (WSPT), and a demographic information sheet.

The combined samples responded from every state, were two-thirds female, represented all grade levels in all types of schools with enrollments ranging from 21 to 2,425, and taught all elementary grades, 12 secondary subjects, and special education. The TOY and IT samples were comparable by gender, grade levels, types and sizes of schools, and states. These data were generalizable to 1989 national public school faculty statistics.

A general linear model was constructed to test differences between TOY and IT samples on all eight variables, using a logistic multiple regression procedure (LOGIST). Results of the analysis for a reduced model (interactions removed) were that Teachers of the Year were significantly more humanistic in their pupil control beliefs and held significantly more master's level or higher degrees than inservice teachers. After removing pupil control as a variable, significance was found for teacher locus of control. Removal of pupil control and locus of control variables resulted in significance for teacher efficacy.

Earlier research on teacher belief systems typically found teacher efficacy and teacher locus of control to be strongly related to student achievement. In this study humanistic pupil control ideology was more strongly related to selection as Teacher of the Year than the other two belief systems.

Conceivably those chosen as Teacher of the Year endorsed more caring attitudes towards students than regular classroom teachers.

CHAPTER I INTRODUCTION

Statement of the Problem

The nature of teacher effectiveness is an issue which has generated a considerable amount of research in the educational community for nearly a century. In spite of investigations addressing many possible approaches, researchers have concluded that very little is known about effective teaching (Ornstein & Miller, 1980; Rosenshine & Furst, 1971). Hamachek (1969) observed that, "probably no issue in education has been so voluminously researched as has teacher effectiveness and conditions which enhance or restrict this effectiveness. Nonetheless, we still read that we cannot tell the good guys from the bad guys" (p. 341).

Public interest in teacher effectiveness became widespread in the '70s with social concern about declining student achievement. The most common response to a public poll on how the schools could earn an "A" grade was to improve the quality of the teacher (Gallup, 1979). Increased attention to teacher accountability, merit pay systems and related issues magnified the significance of student outcomes as criteria for judging teaching effectiveness. However, as researchers continued to reveal the complexity of the teaching/learning process, recognition

of the need for a more well-defined teacher evaluation system has become a primary concern (Darling-Hammond, Wise, & Pease, 1983).

Researchers have made many attempts to investigate teaching effectiveness, probing both internal constructs and external behaviors of the teacher. Much early effectiveness research was devoted to the study of teacher personality traits (Cattell, 1964; Coopersmith, 1967; Eysenck & Eysenck, 1964; Isaacson, McKeachie, & Milholland, 1963) and characteristics (Jensen, 1951; Ryans, 1960; Symonds, 1955). One study of teacher characteristics spanned 10 years (Ryans, 1960). Another approach to the study of teacher effectiveness has been the systematic observation or "process-product" approach, which focused on the teacher's observable, classroom behavior (Dunkin & Biddle, 1974; Good & Grouws, 1977; Rosenshine & Furst, 1973; Soar & Soar, 1976; Stallings, 1976).

A promising current model for conceptualizing teacher effectiveness is the A-B-C-D link model (Ashton & Webb, 1986; Brophy & Good, 1970; Garner & Bing, 1973; Luce & Hoge, 1978). This model describes a causal chain of four interconnecting links: (A) teacher beliefs, (B) teacher behavior, (C) student behavior, and (D) student achievement (Rose & Medway, 1981b). The B-D link is assumed by process-product research (Brophy, 1979).

Early reference to the importance of antecedents to teacher behavior, the "A" link of this model, was made by Rosenthal and Jacobson (1968), who emphasized the effects of

teacher expectation upon student achievement. Empirical research provided support for expectancy theory (Brophy & Good, 1974; Garner & Bing, 1973), as well as other teacher belief systems, such as locus of control (Murray & Staebler, 1974; Vasquez, 1973) and efficacy (Armor et al., 1976; Ashton & Webb, 1986; Berman et al., 1977).

If teacher beliefs do contribute to teacher and student behavior and finally to student achievement, an examination of teacher beliefs held by a group of teachers generally defined as being effective might make a significant contribution to an understanding of teacher effectiveness. The present study concentrates on the "A" link, teacher beliefs. Four types of teacher beliefs have been found to be highly correlated with various elements of the A-B-C-D link model. These include teacher efficacy, teacher locus of control, pupil control ideology, and teacher stress. Each of these belief systems will be described briefly.

Teacher Efficacy

A cognitive motivator of behavior, self-efficacy, is defined as one's belief in her/his own capability to perform a given behavior in a specific situation (Bandura, 1977). Furthermore, self-efficacy beliefs "affect people's choice of activities, how much effort they expend, and how long they will persist in the face of difficulties" (Bandura & Schunk, 1981, p. 587).

In the context of the classroom, this situation-specific construct becomes "teacher efficacy" and is defined

as the teacher's belief in her/his ability to affect student learning (Ashton & Webb, 1986; Gibson & Dembo, 1984). Teacher efficacy is not only specific to the classroom, but is defined multidimensionally. The teacher efficacy construct includes two factors, personal and teacher efficacy. Teacher efficacy is defined as the "belief that any teacher's ability to bring about change is significantly limited by factors external to the teacher, such as home environment, family background, etc.," whereas the personal efficacy dimension is defined as the "belief that a teacher has the skills and abilities to bring about student learning" (Gibson & Dembo, 1984, p. 570). A considerable amount of research has been conducted on teacher efficacy (Armor et al., 1976; Ashton, Webb, & Doda, 1983; Berman et al., 1977; Gibson & Dembo, 1984). Berman et al. (1977) referred to the teacher's sense of efficacy as the "single most powerful explanatory variable" related to student performance and teacher change (p. 73).

Ashton and Webb (1986) found that "teachers with a high sense of efficacy were more likely than their low-efficacy counterparts to define low-achieving students as reachable, teachable and worthy of teacher attention and effort" (p. 72). Further, they stated that their findings "strongly support the hypothesis that teachers' sense of efficacy is related to student achievement" (p. 138). This conclusion has been supported by other studies (Lent, Brown, & Larkin, 1984; Norwich, 1985; Relich, Debus, & Walker, 1986; Tracz & Gibson, 1986).

Teacher Locus of Control

A related set of teacher beliefs, also described as a cognitive motivator of behavior, locus of control may be defined as the degree to which one believes her/his own behavior is the determiner of events affecting her/his life, as opposed to fate, luck or powerful others. People who believe that their own actions are responsible for the outcome of events occurring in their lives are said to have an internal locus of control (of reinforcement) and are referred to as "internals," whereas those who believe that these outcomes are in the hands of powerful others or are attributable to task difficulty, "luck," or "chance" are said to have external locus of control and are called "externals" (Phares, 1976; Lefcourt, 1971). Consequently, if someone believes that how s(he) chooses to behave directly affects the events in her/his life, this belief can be expected to have considerable bearing upon the future actions of that person (Lefcourt, 1981; Rotter, 1966).

In distinguishing between self-efficacy and locus of control, Bandura (1981) contended that "in any given instance behavior would be best predicted by considering both self-efficacy and outcome beliefs" (p. 23), and that "peoples' efficacy and outcome expectations influence how they behave" (1978, p. 346). He differentiated between outcome and efficacy beliefs, explaining that a person can believe that specific behaviors will produce certain outcomes (locus of control), while simultaneously holding

the belief that s(he) is not personally capable of executing the specific behavior necessary to produce such an outcome (efficacy) (Bandura, 1977a). This view provides support for the necessity and usefulness of investigating both teacher efficacy and locus of control.

Distinguished from general locus of control, teacher locus of control may be defined as

the teacher's tendency to attribute the outcomes of student behavior (such as high or low achievement) to internal or external factors. . . . Teachers with a generalized expectancy of internal control perceive classroom events, such as student performance, as being a consequence of their own actions and under their personal control. Teachers with an expectancy of external control perceive little contingency between their actions in the classroom and student behavior.
(Rose & Medway, 1981, p. 375)

The Teacher Locus of Control Scale (TLC) has been found to be a better predictor of effective teacher behavior than general locus of control scales, such as the I-E Scale (Rotter, 1966). This may be because it was designed to measure expectancies specific to the classroom setting and thus may yield higher correlations between teacher beliefs, interactions of students and teachers, and student outcomes. The TLC scale was the instrument used in measuring teacher locus of control in the present study.

The relationship between locus of control and achievement was first recognized in 1962 by Crandall, Katkovsky, and Preston, but received little attention until it was cited in the Coleman Report (Coleman, Campbell, Holeson, McPartland, Mood, Weinfeld, & York, 1966) as a major factor in achievement behavior.

Although researchers in the studies described above referred to the learner's locus of control, social scientists have also found the teacher's locus of control to significantly affect student achievement (Murray & Staebler, 1974; Porter & Cohen, 1977; Rose, 1978; Rose & Medway, 1981a; Vasquez, 1973) and overall teaching competence rating (Scheck & Rhodes, 1980).

Pupil Control Ideology

"The most important characteristic schools share in common is a preoccupation with order and control" (Silberman, 1970, p. 122). For the teacher, pupil control is frequently "so pronounced that the goal of classroom order often displaces student learning as the definition of teaching effectiveness" (Rosenholtz, 1989, p. 429).

"School teachers live in a world where classroom control is deemed vital to their occupational survival" (Denscombe, 1985, p. 143). This may explain why the study of human behavior and interaction within the institutional setting of the school system represents a major area of educational research (Anderson, 1982).

Classroom control perspectives are often based on the sociology of work and organizations (Denscombe, 1985). This comparison would be useful, but for two major exceptions. In the classroom, the "clients" are not voluntary, and the raw materials are humans (Helsel & Willower, 1974, p. 114). The school system fits into the special category of "people-changing organizations" (Carlson, 1964). Other organizations which fit into this category are mental

hospitals, prisons, and military organizations, with teachers playing the role of "drill-sergeant" (Webb, 1962; Carlson, 1964).

In these organizational settings, as in classrooms, the emphasis on control is pervasive. Willard Waller (1932) portrayed the classroom setting in the following way:

Teacher and pupil confront each other with attitudes from which the underlying hostility can never be altogether removed. Pupils are the material in which teachers are supposed to produce results. Pupils are human beings striving to realize their own results in their own way. Each of these hostile parties stands in the way of the other; in so far as aims of either is realized, it is at the sacrifice of the aims of the other. (p. 196)

Denscombe (1985) likened the situation to guerrilla warfare, in which the attacks on the ruling government are sporadic and localized; rarely is there all-out war. Novice teachers learn very quickly that expertise in subject matter and in pedagogical skills is not enough, if one is not first well-skilled in classroom control. "The teacher who cannot control never gets to the point of being able to teach" (Haigh, 1979, p. 7).

Researchers probing into this matter have found that "after two years of teaching experience, 87% of the elementary teachers and 82% of the secondary teachers described their schools as ones in which 'good teaching and good classroom control tend to be equated'" (Hoy, 1969, p. 262).

Much of the research on educational climate control has been focused on administration and on school buildings,

rather than on classrooms and the teacher's perspective (Anderson, 1982). This approach is not without criticism, however. Clearly, "classroom control without the class is nonsense" (Denscombe, 1985, p. 193).

It was not until the late '60s that researchers began to investigate the classroom and, specifically, the teacher's orientation towards the student (Anderson, 1982). Anderson (1982) has listed the Pupil Control Ideology Form (Willower, Eidell, & Hoy, 1967, 1973) among the major instruments in use which directs the focus of classroom control onto the teacher.

Willower and Jones (1963) recognized the parallel between the control patterns found to be operating in junior high school classrooms and those at work in a mental hospital, based on a typology being utilized by Gilbert and Levinson (1957) to study the feelings of mental hospital aides towards their patients. The custodial/humanistic continuum used to control behavior in this people-changing organization was not unlike that observed in school classrooms.

The bipolar continuum of control behavior beliefs in the typology has been adapted to conform to the classroom. Although most educators will fall between the poles of the continuum, the extremes are described in the following way:

The educator with a custodial orientation desires a highly controlled setting and is concerned primarily with the maintenance of order. Students are stereotyped in terms of their appearance, behavior, and parents' social status. The students are perceived as irresponsible and undisciplined persons

who must be controlled through punitive sanctions. The custodial teacher does not attempt to understand student behavior, but instead views it in moralistic terms. Misbehavior is taken as a personal affront. Relationships with students are maintained on as impersonal a basis as possible. Pessimism and watchful mistrust imbue the custodial viewpoint. Teachers holding a custodial orientation conceive of the school as an autocratic organization with rigidly maintained distinctions between the status of teachers and that of pupils. Both power and communication flow downward, and students are expected to accept the decisions of teachers without question. Teachers feel responsible for their actions only to the extent that orders are carried out to the letter.

The educator with a humanistic orientation views the school as an educational community in which members learn through interaction and experience. A student's learning and behavior is viewed in psychological and sociological terms rather than the passive absorption of facts. The withdrawn student is seen as a problem equal to that of the overactive, troublesome one. The humanistic teacher is optimistic that, through close personal relationships with pupils and the positive aspects of friendship and respect, students will be self-disciplining rather than disciplined. A humanistic orientation leads teachers to desire a democratic classroom climate with its attendant flexibility in status and rules, open channels of two-way communication, and increased student self-determination. Teachers are willing to act upon their own volition and to accept responsibility for their actions.

(Willower, Eidell, & Hoy, 1973, pp. 5-6)

Hundreds of studies have been conducted using the Pupil Control Ideology Form, largely in the areas of personality, behavior, school type, and organizational differences, and differences in teaching experience. Several reviews of these studies have been published (Packard, 1988; Willower, 1975, 1977).

The Pupil Control Ideology Form (PCI), designed by Willower, Eidell, and Hoy (1967, 1973) to assess these beliefs, has been named one of the major instruments used by researchers for the investigation of classroom climate (Anderson, 1982). Classroom climate has been found to affect many student outcomes, including achievement (Brookover, et al., 1978).

Teacher Stress

Schools are said to be among the most stressful ecologies in our society (Samples, 1976), and teaching, to have a seriously high occupational stress level in comparison to other professions (Cox & Brockley, 1984; Nerell & Wahlund, 1981; Hunter, 1977). One of the projections made by the Carnegie Forum on Education and Economy (1986) was that half of all teachers employed at that time would leave the profession by 1992. Another report listed the national price tag for teacher stress and burnout at \$3.5 billion per year, due to absenteeism, turnover, poor performance, and waste (Truch, 1980).

Teacher stress has been defined many different ways in the literature. One definition of teacher stress is

a response by a teacher of negative effect (such as anger, anxiety or depression) accompanied by potentially pathogenic physiological changes (such as increased heart rate, or release of adrenocorticotrophic hormone into the bloodstream) as a result of the demands made upon the teacher in his role as a teacher.

(Kyriacou & Sutcliffe, 1977, p. 299)

Hans Selye, the well-known pioneer in stress research, defines stress as "the nonspecific response of the body to

any demand made upon it" (1974, p. 4). He not only distinguished between eustress and distress, eustress being a healthy, positive stress, which might increase the motivation and quality of performance, and distress, the harmful, negative sort of stress, which interferes with both physical and mental health, and which is detrimental to performance, but he also defined stress as simply the rate of wear and tear on the body.

"Burnout," often referred to in the same context with teacher stress, is not synonymous with teacher stress; whereas stress is to be expected with teaching, burnout is not (Selye, 1976). "Burnout" is defined as "the syndrome resulting from prolonged teacher stress, primarily characterized by physical, emotional, and attitudinal exhaustion" (Kyriacou, 1987, p. 146). Furthermore, Farber (1984) cautioned that burnout actually occurs not from stress, but rather as a result of unrelieved or untreated stress.

Researchers and teachers' organizations began to express considerable concern about the possible consequences of teacher stress for the entire public education system (Kyriacou & Sutcliffe, 1977; NEA, 1979). Within the last decade survey researchers comparing teachers with other professions have typically found that teachers reported the highest levels of occupational stress (Cox & Brockley, 1984; Nerell & Wahlund, 1981).

Eskridge and Coker (1985) indicated that reduced efficiency, tardiness and absenteeism, increased

irritability, lack of control, and, ultimately, loss of caring for people are among the typical symptoms of teacher stress. Considering these conditions, decreased effectiveness and lowered achievement could result proportionate to the amount of stress perceived by the teacher.

Although anxiety and stress are not synonymous constructs, it may be recalled that anxiety is viewed as a component of teacher stress (Kyriacou & Sutcliffe, 1977, p. 299). This may indicate relevance for the relationship between teacher anxiety and student achievement. Indeed, evidence indicates that achievement is lower for students of high anxious teachers than for low anxious teachers (Heil & Washburne, 1962). There is also evidence of adversely affected achievement scores for high-achievers assigned to burned-out teachers (Dworkin, 1985).

Measures developed to assess teacher stress are numerous, because researchers often choose to develop their own instruments, rather than utilizing existing measures (e.g., Blase, 1986; Fimian, 1984b; Moracco, Danford, & D'Arienzo, 1982; Pettigrew & Wolf, 1982). The problem that arises from this situation is that teacher stress measures often lack good psychometric properties (Luh, 1989). One instrument which measures nine areas known as most stressful for teachers, and which has been evaluated as having good psychometric properties (Luh, 1989) is the Wilson Stress Profile for Teachers (Wilson, 1979), the instrument for use in measuring teacher stress in the present study.

Factors Related to Belief Systems

Four demographic variables have been found to influence the teacher belief systems analyzed by the present study. These variables include teacher gender, years of teaching experience, grade level taught, and highest degree earned.

Gender differences have been found to be related to teacher locus of control (Garrett, 1977), teachers' sense of efficacy (Greenwood, Olejnik, & Parkay, 1990), and pupil control ideology (Bean, 1972; Budzik, 1971).

Teaching experience differences have been reported to be significantly related to teachers' sense of efficacy (Gibson & Brown, 1982; Hutchins, 1987), locus of control (Leming, 1981), pupil control ideology (Hoy, 1968; Hoy & Rees, 1977), and stress (Holt, Fine, & Tollefson, 1987). Anxiety has also been observed to be widespread among beginning teachers (Coates & Thoresen, 1976).

Highest degrees earned by teachers is related to teachers' sense of efficacy, according to Gibson and Brown (1982). This relationship was also reported in related research of teachers' attitudes toward parent involvement (Hoover-Dempsey, Bassler, & Brissie, 1987).

Grade level differences have been reported to be related to the teachers' sense of efficacy (Greenwood, Olejnik, & Parkay, 1990), and stress (Farber, 1984).

Belief systems and teacher effectiveness

It has been argued that "teachers typically make decisions based on their personal belief systems" (Greenwood

& Parkay, 1989, p. 4), and that effective decision-making is critical to effective teacher behavior (Clark & Peterson, 1986; Shavelson, 1973).

If it is true that selected beliefs held by teachers shape the thoughts and decisions and, therefore, the behaviors that lead to more or less effective outcomes in the classroom, then it would be important to determine which specific teacher beliefs are likely to bear on teaching effectiveness. Previous researchers have indicated that the four belief patterns discussed above may be expected to be good predictors of effective teaching. Again, the four belief patterns are teachers' beliefs related to self-efficacy, locus of control, pupil control, and perceived level of stress as a result of job demands. The present study addresses the relationship between these four teacher belief systems and teacher effectiveness.

Purpose of the Study

The purpose of this study was to examine the differences between a sample of the Teachers of the Year (TOYs) population and that of regular inservice teachers (ITs) in terms of their beliefs regarding efficacy, locus of control, pupil control, and teaching stress.

A population of teachers which has been identified as being more effective than the general population of professional teachers, both in educational achievement and in professional attitudes and behaviors, is the Teachers of the Year (Wiedmer, 1983). Following a study of the Teachers

of the Year (TOYs) from 1978-1982, Wiedmer and Brod (1985) stated that "Significant differences in the educational achievement and in professional attitudes and behaviors of TOYs distinguish them from their counterparts in the nation's schools" (p. 212). This finding indicates possible differences between TOYs and comparison teachers with regard to the four belief patterns discussed above.

Wiedmer (1983) developed a profile instrument designed to survey and compare the award-winning teachers with their counterparts on age, sex, grade level taught, regions, ethnicity, attitudes toward teaching, decision to become teachers, and career choice. Chi-square and t -test significance ($p < .05$) for all eight comparisons showed the typical TOY to be female, caucasian, and 42 years of age. Most have master's degrees and graduate GPAs of about 3.80. TOYs have generally taught for 15 years and intend to continue teaching until retirement. Nearly all TOYs spend three or more hours per day beyond required contractual time on school-related activities compared to the one extra hour per day reported by 55% of other teachers. Ninety percent of TOYs named enjoyment of students as their main reason for teaching.

The above attitudes and traits found to be typical of TOYs are related to the four teacher belief constructs examined in this study. Teachers who are accomplished, hard-working scholars, and who teach primarily because they enjoy their students, might be expected to believe themselves to be the capable determiners of the outcomes in

their classroom environments and to own humanistic attitudes towards student control. Three of the instruments used in this study, the Teacher Locus of Control Scale, the Teacher Efficacy Scale, and the Pupil Control Ideology Form, include items designed to measure these attitudes.

Finally, researchers have found that burnout, a by-product of stress, is most common among teachers who are under 30 years of age, inexperienced (taught less than five years), and who hold external locus of control beliefs (Dworkin, 1985). Because TOYs are generally older, experienced, and internal in their locus of control beliefs, the fourth instrument used in this study, the Wilson Stress Profile for Teachers, designed to measure five specific areas of stress in teaching, was chosen to reflect differences possibly related to the above factors.

The Teacher of the Year, a program begun in 1952, has as its purpose the selection of the nation's most outstanding teachers. The National Teachers of the Year Program "has become recognized as the most prestigious such program in American education" (Harris & Harris, 1989, p. 177). Guidelines for selection of the Teachers of the Year are issued by the Council of Chief State School Officers in Washington, D.C., and require nominees to be selected by administrators, teachers, and students from candidates teaching in accredited schools, preschool through twelfth grade. Each nominee is then required to submit a personal portfolio which must include information regarding teaching accomplishments, educational preparation,

professional biography, professional association membership, community involvement, philosophy of teaching, knowledge of educational issues and trends, personal teaching style, philosophy of the responsibility of a Teacher of the Year, and letters of support for their nomination from superintendents, administrators, colleagues, students, parents, and civic leaders (D. S. Pierce, personal communication, November, 1989; J. Quam, personal communication, September 14, 1990).

Although not all states and territories always submit a winner, a total of approximately 53 TOYs, one from each state or territory, are generally chosen each year. From this group, three finalists are selected, and a national winner is chosen each year. National finalists are then selected by a 12-member committee appointed by the Council of Chief State School Officers from professional education associations, lay groups, and universities. Final selection is made on the basis of interviews, as well as observations and videotapes of classroom skills (Miller, 1989).

Researchers have found TOYs to be significantly different than other teachers on both philosophy and attitudes towards teaching (link A), as well as teaching style and professional behavior (link B). Ninety percent of Teachers of the Year stated that they chose teaching as a profession because they enjoy working with young people, and that they have remained in the profession because of their enjoyment of and commitment to teaching. A significant number of the TOYs spend many hours on school-related

activities beyond their contractual required time, and used more innovative ideas for teaching (Wiedmer, 1983; Wiedmer & Brod, 1985). It may be important to note, however, that to assume high efficacy beliefs for all those awarded for performance may be erroneous. Bandura (1977) cautioned that

performance attainments do not necessarily enhance perceived efficacy. It depends on how the determinants of the performances are cognitively appraised and how they measure up against internal standards. . . . A theory of effectance, therefore, must consider the important role played by personal standards and cognitive appraisal in the affective and self-evaluative reactions to one's performance. (p. 411)

Examination of the belief systems of this population, the Teachers of the Year, offers one method of assessing the belief systems of teachers judged to be effective. To date, the four patterns of belief systems proposed in this study have not been examined in relation to this population of teachers.

Limitations

A limitation of the present study regards the use of self-report instruments. General controversy over the validity and reliability of self-report inventories has persisted for many years (Combs & Soper, 1963; Heilbrun, 1965; Purinton, 1965; Purkey, 1968; Shulman, 1968; Wylie, 1961). In spite of the possible biases, many researchers find the use of self-report instruments to be appropriate. They have taken the position that self-reports are useful respondent information (Rogers, 1951), that any individual has the right to be believed (Allport, 1954), and that if

one's history cannot be known, there is no recourse but to assess directly through self-report (Mischel, 1968). Wylie (1974) added that "self-referent constructs are potentially very important to theoretical understanding and practical application" (p. 701). Currently, self-report procedures represent the most widely used means with which to assess the belief systems under examination.

A second limitation of this study may involve the selection process for Teacher of the Year nominees. Although there is a national selection procedure for TOYs (guidelines for the selection of Teacher of the Year are issued by the Council of Chief State Officers in Washington, D.C.), there may be variance in the application of these procedures. The national office has no system for monitoring guideline interpretation at the state level. In addition, selection is largely a judging process which implies subjective interpretation of teacher effectiveness from TOY nominee portfolios.

A further limitation may be the *ex post facto* nature of the design of this study. These data allow investigation of relationships but not prediction or causal explanation.

Finally, in this study teacher effectiveness is defined in terms of selection as Teacher of the Year. Previous researchers have typically operationalized teacher effectiveness as student achievement (Dunkin & Biddle, 1974; Good & Grouws, 1977; Soar & Soar, 1976). Although researchers have cited limitations for research in which teacher effectiveness is defined as student achievement

(Rosenshine & Furst, 1973; Shavelson, Webb, & Burstein, 1986; Shulman, 1986) and teacher effectiveness has also been defined in terms of teacher belief systems (Clark & Peterson, 1986; Shavelson, 1973), some researchers may perceive the approach used in this study, defining teacher effectiveness as selection as Teacher of the Year, as a limitation.

Significance of the Study

Concern for the nation's economic well-being has moved the issue of effective teaching to the top of the national agenda. The need for better understanding of teaching effectiveness continues to be an urgent concern. Years of rigorous and varied investigation has failed to define objective criteria with which to measure effective teaching. However researchers now acknowledge that "teaching is complex, demanding, and uniquely human" (Clark & Peterson, 1986, p. 293), that "What makes a good teacher is a highly personal matter having to do with the teacher's personal system of beliefs" (Combs, 1982, p. 3), and that "if our purpose and intent are to change the practices of those who teach, it is necessary to come to grips with the objectively reasonable beliefs of teachers" (Fenstermacher, 1979, p. 174). Teacher education institutions may need to examine whether and in what ways they impact on the teacher belief systems. Determining that a system of beliefs differentiates the most effective teachers from the general population of professional teachers could, in part, affect

the future direction of educational reform and ultimately the quality of the educational system.

Researchers have called for greater focus on studies of teacher efficacy (Dembo & Gibson; 1985), teacher locus of control (Rose, 1978), pupil control orientation (Rose & Willower, 1981), teacher stress (Luh, 1989), and the training of teacher belief systems (Guskey, 1984; Adams & Bailey, 1989) for greater understanding and improvement of teaching effectiveness. No attempt has been made to investigate simultaneously all four of the belief systems assessed in the present study. No attempt has been made to investigate these belief systems with the Teacher of the Year population.

Questions

This study asked the following questions about the TOYs contrasted with a comparison group of inservice teachers:

1. Do the Teachers of the Year have a higher sense of efficacy than inservice teachers as measured by the Teacher Efficacy Scale?
2. Are the Teachers of the Year more internal in their locus of control of reinforcement than inservice teachers as measured by the Teacher Locus of Control Scale?
3. Are Teachers of the Year more humanistic in their attitude, relationship, and interaction with their students than inservice teachers as measured by the Pupil Control Ideology Form?
4. Do Teachers of the Year believe they experience lower levels of stress on the job than do inservice teachers

as reflected by scores on the Wilson Stress Profile for Teachers?

5. Do Teachers of the Year and inservice teachers differ on their sense of efficacy, locus of control, pupil control ideology, or perceived stress levels as a result of gender, years of teaching experience, grade level taught or highest degree earned?

Hypotheses

The purpose of this study was to determine whether differences exist between Teachers of the Year and inservice teachers in terms of four types of teacher beliefs.

The specific null hypotheses are:

1. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Efficacy Scale (TES), the Teacher Locus of Control Scale (TLC), the Pupil Control Ideology Form (PCI), or the Wilson Stress Profile for Teachers (WSPT).

2. Whether a teacher is selected as Teacher of the Year will not be significantly related to the teacher's gender, years of teaching experience, grade level taught, or highest degree earned.

3. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Efficacy Scale by gender, years of teaching experience, grade level taught, or highest degree earned.

4. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Locus of Control Scale by gender, years of teaching experience, grade level taught, or highest degree earned.

5. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Pupil Control Ideology Form by gender, years of teaching experience, grade level taught, or highest degree earned.

6. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Wilson Stress Profile for Teachers by gender, years of teaching experience, grade level taught, or highest degree earned.

CHAPTER II REVIEW OF THE LITERATURE

Introduction

It is the purpose of this chapter to present the research literature which underlies the four teachers' belief systems examined in this study and their link to teacher effectiveness. First, a review of the literature of the A-B-C-D link model of teacher effectiveness will be presented. Next, studies bearing on the four belief systems of teachers' sense of efficacy, teacher locus of control, pupil control ideology, and teacher stress are presented, followed by studies regarding the four related demographic variables of teacher gender, years of experience, grade level taught, and highest degree earned. Concluding this review is research examining the interrelatedness of the four belief constructs.

Research Related to the A-B-C-D Link Model

A model postulating a causal chain of four interconnecting classroom events has emerged from a series of teacher effectiveness studies of the last two decades. The model has become known as the A-B-C-D link model and identifies (A) teacher beliefs, (B) teacher behavior, (C) student behavior, and (D) student achievement as causal links of teacher effectiveness.

The model originated with a small group of investigators whose plan was to identify teaching behaviors (link B) which relate to student achievement (link D) (Jayne, 1945; Medley & Mitzel, 1959; Morsh, Burgess, & Smith, 1956). This B-D link pattern of studies became known as the Process-Product research, because its purpose was to link teacher behavior (link B) and/or student behavior (link C) variables and their observed classroom interactions to student achievement outcome variables (link D).

An example of this type of research is a study by Good and Grouws (1977), in which systematic observation data were collected from 41 fourth-grade mathematics classes. Data information included instructional time, low and high inference descriptions of teacher-student interaction patterns, and descriptions of materials and assignments. These "process" data were subsequently compared to "product" measures in the form of residual scores from mathematics portions of the Iowa Test of Basic Skills (ITBS) tests. Teaching effectiveness, operationally defined as student achievement scores, was found to relate to certain student-teacher behaviors/interactions, the B-D link.

The research which called attention to the A link of the model, teacher beliefs, was the controversial teacher expectancy research, presented in Pygmalion in the Classroom by Rosenthal and Jacobson (1968). Over 100 subsequent investigations lent support to the teacher expectancy, or self-fulfilling prophesy, theory derived from the research (Brophy & Good, 1970; Elashoff & Snow, 1971).

Brophy and Good (1970) alluded to the A-B-C-D link model in their study of 4 first-grade classes, in which they examined the effects of teacher expectancy with the specific purpose of determining the ways in which teachers communicate their expectations that cause their students to respond reciprocally. Teachers' rankings of their students' achievement were used to measure the teacher's expectations for pupil performance. Choosing 3 boys and 3 girls from each extreme (highest and lowest achievers) per classroom, researchers focused on the specific teacher-student interactions between these few dyads, while allowing teachers to believe that the focus was centered on the whole class and only on student behavior. All teacher behavior related to whole-class instruction was ignored. A coding system was used to determine data such as the source of initiation of interactions, the nature of interaction and reaction cycles, the number of response opportunities, the type of questioning used by teachers, and the type and quality of student response and teacher feedback.

Using analysis of variance to assess the effects of teacher expectancy by gender and class level, the researchers found that the students for whom the teachers held highest expectations performed more behaviors related to achievement gains (e.g., raising their hands, staying on task), and confirmed the hypothesis that teacher expectations do function as self-fulfilling prophecies. The data revealed that achievement levels (link D) are related to teachers' expectations (link A).

In a different vein of research, Garner and Bing (1973) sought to determine whether teacher behavior towards students is related to teacher perception of student attributes. They collected data on tape recorded verbal exchanges between 7 second-grade teachers and 244 students, as well as teachers' ratings of these students on 11 scales. These scales included temperament, intellectual ability, level of dependence, attractiveness, extent of imagination, school performance, conduct, humor, motivation, social skills, and the degree of affection the teacher holds for the student. Kendall's coefficient of concordance measured teacher-student contact patterns, and varimax factor analysis was used to intercorrelate student ratings. Intercorrelation matrices revealed a similar pattern for all teachers' ratings with respect to student intelligence, performance, and attitude towards their work. Garner and Bing concluded the A link to be "essential," adding that knowledge of this first link would "increase the sensitivity of research design," as well as increase the "capacity to influence teacher behavior" (p. 42).

Another study was conducted by Luce and Hoge (1978), whose aim was to assess data on all four A-B-C-D links simultaneously. Data on teacher-pupil interaction, attentiveness, student verbal and mathematics levels, and teachers' rankings were collected on 104 third- and fourth-grade students and 5 teachers. Teacher expectations were measured by teacher ratings of student general intellectual ability, and the Brophy-Good Dyadic Interaction

Schedule was used to assess teacher-student interaction. A measure of student attentiveness was determined by the Revised Jackson-Hudgins Observation Schedule, and student verbal and math ability by the Canadian Lorge-Thorndike Intelligence Test and Canadian Tests of Basic Skills, respectively. Regression analyses of achievement on the expectancy factor alone, as well as achievement on expectancy, teacher behavior, and student behavior factors, were significant. The authors concluded that although the results of correlational analyses seem to provide general support for the A-B-C-D model, teacher expectancy alone was not the major determiner of student achievement. Student and teacher behavior factors were significant additional predictors of achievement rankings.

Finally, Rose and Medway (1981b) also proposed to gather data on the A-B-C-D link model and to establish the A-B link. This study differed from previous work, in that the A link was defined as teacher locus of control rather than expectancy. The researchers predicted that teacher locus of control would be significantly related to student achievement because internal teachers would use more direct instruction, and further, that students of internal teachers would spend more time on task as a result of direct instruction.

The I-E scale (Rotter, 1966) was used to measure the locus of control tendencies of 44 fourth-grade teachers. Student achievement was determined by gain scores on student Comprehensive Test of Basic Skills (CTBS) tests. In

addition, observations of 17 teachers and their students were conducted using the Observation Schedule and Record Instrument (OScAR) and the Florida Climate and Control System (FLACCS) to determine which student and teacher behaviors were related to teacher locus of control and student achievement. Teacher accountability behaviors were determined using the Kounin Group Management Concepts (1970). Two lesson presentation styles were defined, circulating/supervising or traditional. Second-order partial correlation coefficients revealed significance for teacher internality and student math achievement scores in the sample of 17 teachers; however, regression analyses determined teacher locus of control to account for only six percent of total posttest achievement, whereas teacher behaviors accounted for twice that amount of variance. Rose and Medway concluded that their results, like those of Luce and Hoge (1978), had not been able to establish a strong A-B link.

Since the I-E scale was designed to measure general locus of control and researchers have noted the importance of assessing this construct for specific situations (Lefcourt, 1976; Phares, 1976), Rose and Medway surmised that the use of the I-E for measuring teacher locus of control may result in reduced correlations. In a later study, using their own newly constructed Teacher Locus of Control Scale (TLC), Rose and Medway (1981a) were able to demonstrate a significant relationship between locus of control scores and teacher behavior. In one validity study

researchers examined the relationship between the locus of control and classroom behavior of 30 female fourth-grade teachers who responded to the final version of the Teacher Locus of Control scale. Findings were significant for two tests in which teacher locus of control was directly related to teacher behavior. Specifically, internal teachers gave fewer disciplinary commands and engaged in less student accountability behavior than did teachers who were assessed to have external locus of control orientations.

When a locus of control instrument specifically designed for the classroom situation is utilized, it appears that teacher locus of control beliefs relate directly to teacher behaviors, affirming the A-B link.

Research Related to Teacher Efficacy

Teacher efficacy has been identified as a variable that correlates significantly with student achievement. Earliest reports of the link between teacher efficacy and student achievement emerged from two Rand Corporation studies. Both studies used two questions to measure teacher efficacy. The two items used in the Rand studies to measure teacher efficacy were: Rand 1 - "When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment" (low sense of teacher efficacy) and Rand 2 - "If I really try hard, I can get through to even the most difficult or unmotivated students" (high sense of personal efficacy) (Berman et al., 1977, pp. 159-160).

In the first of the Rand studies, Armor et al. (1976) analyzed the School Preferred Reading program in Los Angeles. Using the reading test (Q2) of the California Test of Basic Skills (CTBS) as the measure of achievement, the researchers compared gain scores of sixth-graders from 20 schools to assess which schools were most successful in increasing inner-city students' reading scores. In addition, 81 teachers responded to a questionnaire of information regarding school leadership, reading program content and implementation, classroom atmosphere, and teacher attitudes and background (race, college attended, undergraduate major, and extent of reading instruction). They determined that neither prepackaged reading techniques nor specific teachers background characteristics were among the factors contributing to improved reading achievement, rather the teacher's sense of efficacy was found to be significantly related to both student achievement measures used. Policies enhancing implementation of reading programs were also found to raise scores. It was concluded that the belief by principals and teachers, that children can be taught to read regardless of motivation or background, was highly related to reading achievement gain.

Linking teacher efficacy to both student achievement and teacher behavior, Berman et al. (1977), in a later Rand study, assessed 100 Title III ESEA Change-Agent projects. Four dependent variables were included in the study: the percentage of project goals achieved, the amount of teacher change, the amount of improvement in student performance,

and the length of continuation of use of both project methods and project materials. Researchers measured teacher efficacy behavior by judging the extent to which teachers made changes during the time limit within which the federal projects were being funded, and also the extent to which teachers continued to make changes and to use project methods and materials beyond the time that the federal funding was terminated. Researchers determined teacher efficacy to be the best predictor of teachers' completion of project goals, teachers' continued use of materials and methods, teacher change, and student achievement. Although results indicated that teacher sense of efficacy was related to all four dependent variables in the study, regression coefficients revealed the strongest relationship to be between the teacher's sense of efficacy and student learning gains.

In addition, a number of others have reported significant correlations between teacher efficacy, teacher behavior, and student achievement. Possibly the most comprehensive work to date on efficacy and student achievement was done by Ashton and Webb (1986). In an executive summary of several volumes of research on the teacher's sense of efficacy, Ashton, Webb, and Doda (1983), using ethnographic techniques and process-product methods, as well as a number of questionnaires (including the Webb Efficacy Scale, Rand Efficacy items, Rotter I-E scale, school climate measures, and teacher questionnaires) observed and compared two middle schools and 48 high school

teachers. Teacher efficacy and teacher behavior were found to be related at significance levels greater than .05, but equal to or less than .10. They reported significant correlations among teacher efficacy, student-teacher interaction, and student achievement.

Tracz and Gibson (1986) used the Teacher Efficacy Scale (TES) to investigate the relationship of teacher efficacy to the teacher's use of time, student time on task, and student achievement. Observations of two schools, including 14 teachers of fourth, fifth, and sixth grades were conducted. Each teacher and classroom was observed for nine hours. Researchers coded each teacher's time allocation to small-group instruction, whole-group instruction, and seatwork checking, as well as to student time-on-task. Using stepwise multiple regression analysis, researchers determined the personal efficacy factor to be significantly correlated with reading achievement ($p < .04$), whereas the teacher efficacy factor correlated significantly with math achievement scores ($p < .02$). Teacher efficacy was also found to correlate positively with use of whole-class instruction, and negatively with small-group instruction, and student time-on-task was found to be significant for language achievement ($p < .03$).

The Teacher Efficacy Scale (TES), the instrument proposed for use in measuring teacher efficacy in the present study, was developed by Gibson and Dembo (1984). In a three-phase study, they tested this instrument on 208 elementary teachers from 13 different (K-6) schools, as well

as 55 teachers enrolled in graduate education courses, to determine that two factors, teacher and personal efficacy, may be measured reliably by the TES, and that teacher efficacy is a significant variable related to teacher behavior, student behavior, and student achievement.

Research Related to Teacher Locus of Control

The relationship between locus of control beliefs and achievement was first brought to general attention by the largest educational research project ever conducted in the United States. In this study, called Equality of Educational Opportunity, Coleman et al. (1966), surveyed 625,000 students in 4,000 schools and measured 45 variables, most of which appeared to demonstrate that there was little correlation between schools and learning. One conclusion of the massive study, however, was that students' beliefs, regarding control of their environment, did predict their achievement in school.

Confirmation of the Coleman Report results has since come from many studies. Among the most recent of these is a study by Stipek (1980). Stipek observed 89 first graders from 15 classrooms. She obtained achievement scores using the Wide Range Achievement Test (WRAT), and mental age from the Peabody Picture Vocabulary test. Locus of control measures were assessed by the Locus of Control Scale for Children (LOC), a scale which is patterned after the Intellectual Achievement Responsibility Questionnaire (IAR) (Crandall, et al., 1965). Pre and post measures, as well as

cross-lagged panel correlations and path analyses, revealed student achievement to be related to internal locus of control.

Although the importance of student locus of control for academic achievement is well established (Bartel, 1971; Coleman, et al., 1966; Crandall, Katkovsky, & Crandall, 1965; Messer, 1972), the concern of the present study is with the teacher's locus of control. A number of studies have shown teacher locus of control to be a significant contributor to student achievement. Murray and Staebler (1974) studied 10 fifth-grade teachers and 80 fifth-grade students from seven elementary schools. Using Rotter's I-E Scale (1966), they derived locus of control scores from the teachers, and the locus of control scores of students were measured by the IAR Questionnaire (Crandall, Katkovsky, & Preston, 1962). Comparing these scores to student achievement and intelligence scores, which were based on the California Aptitude Test (CAT) and the Comprehensive Test of Basic Skills (CTBS), they found students with internal teachers to have higher achievement levels than those with external teachers, over and above the student's locus of control measures.

Another study found teachers' ratings to be significantly correlated with locus of control measures. Scheck and Rhodes (1980) gathered data on 30 middle-school teachers, using the Adult Nowicki-Strickland I-E scale (ANSIE) (Nowicki & Duke, 1974) and a derived version of the (CNSIE) (Nowicki & Strickland, 1973), together with teacher

ratings, based on a teacher rating scale by Miller and Miller (1973), from the principal, vice-principal, and two counselors. Utilizing a Spearman's Rho for rank order and a Chi-square test with a Yate's Correction and Yule's Q, they found internal teachers to be significantly more likely to be ranked high in overall teaching competence.

Finally, linking teacher locus of control to teacher behavior and student behavior, Rose and Medway (1981a) sampled 183 elementary teachers on the Teacher Locus of Control Scale (TLC), and found a significant relationship between the teachers' TLC scores and their classroom behavior. Internal teachers were found to give significantly fewer disciplinary commands to students, to have significantly less misbehavior among their students, and to experience significantly more independent student on-task behaviors in their classrooms. Varimax factor analysis yielded I- and I+ factors for the TLC scale. When these dimensions were compared with the I-E, Pearson product moment correlations revealed a significant relationship between the I-E and I+ scores for two samples of elementary teachers, but nonsignificant correlations for the same groups of teacher respondents on the I-E and the I- scores. Further, as compared to the I-E Scale (Rotter, 1966), the TLC was found to be a better predictor of teachers' behaviors, because it was designed to measure expectancies specific to the classroom setting and thus may yield higher correlations between teacher beliefs, interactions of students and teachers, as well as student outcomes. The

Teacher Locus of Control Scale (TLC) is the instrument proposed for use in measuring teacher locus of control in the present study.

Research Related to Pupil Control Ideology

Researchers have linked teachers' pupil control ideologies to differences in teacher behavior. Jones and Blankenship (1972) compared the PCI scores of 68 biology teachers with variables on a Biology Classroom Activity Checklist. The checklist included variables such as student participation, use of curriculum materials, prelaboratory practices, laboratory practices, and postlaboratory practices. Results indicated significant differences between the behaviors of humanistic and custodial teachers. Humanistically-oriented teachers offered more explanation, better use of materials, better utilization of test items, and better analysis and discussion of laboratory results than did custodially-oriented teachers.

Teachers with humanistic PCI scores have been found to be more committed to progressive values, whereas teachers with custodial scores have values which are more traditional. Helsel (1971b) surveyed a random sample of 1,000 educators from 43 counties in Illinois. Traditional versus progressive values were measured using the Differential Values Inventory (DVI). When partial correlation coefficients were calculated relating educators values to their pupil control ideology on the PCI, traditional values were found to be positively related to custodial pupil control orientations.

In related research, Borko (1978) found that teachers with stronger traditional beliefs gave students less responsibility for planning their instruction and were more likely to refer students for testing and special classes than teachers with progressive values. She found that teachers with progressive values, on the other hand, were more likely to use peer tutoring and to judge student social competence and emotional growth as more important than did traditional teachers.

Girardi (1980) found teachers' ratings to be significantly related to their pupil control ideologies. He sampled 20 public and 20 parochial schools, gathering ratings on the most and least effective teachers from principals and peers. When ratings were compared with PCI scores, significant difference was found between PCI Scores of public school teachers, as rated by peers, and also for parochial teachers, as rated by principals. Teachers rated most effective were more humanistic in their pupil control ideologies.

Teachers' pupil control beliefs have also been linked with student behavior. Dobson, Goldenberg, and Elsom (1972) collected PCI data on 260 elementary teachers, dividing them into groups by high custodial and high humanistic orientations. The Flanders Interaction Analysis Scale (Flanders, 1968) was used to determine differences in the verbal interaction of students. Findings indicated significantly greater pupil-initiated verbal interaction in classrooms of humanistic teachers. In all cases, humanistic

teachers were found to use significantly more verbal behaviors classified by Flanders as indirect than did custodial teachers.

Lunenberg and Stouten (1983) studied 131 teachers and their students, comparing student reactions about their teachers with the teachers' pupil control ideologies. Results of a multiple regression analysis revealed that the teachers' PCI scores were directly related to the students' projections of rejection or hostility toward their teachers. The custodial teachers' students projected more rejection and hostility.

Finally, classroom climate, which may be related to the effects of the teacher's pupil control beliefs, has been linked to student achievement. Brookover et al. (1978) investigated school climate variables (e.g., student, teacher, and principal beliefs) and achievement in 68 schools, using achievement data obtained from the Michigan Assessment Program (Michigan Department of Education, 1975-1976), and questionnaires completed by 8,078 students, 327 teachers, and 68 principals. Using regression analysis, they concluded that favorable climate, that is, classrooms in which teachers show greater concern for students, greater commitment to their achievement, more positive reinforcement, and higher expectations, contributes to high achievement.

Aspy and Roebuck (1975, 1977, 1979), in a series of studies, ranging from large groups of 6,000 students and 300 teachers to smaller groups of three schools, compared

high and low levels of humane teaching conditions (e.g., climate of trust and respect) and teacher interpersonal skills with the subsequent achievement of the students. Their findings, across all studies, supported the conclusions that humane teacher interactions were directly related to student achievement, as well as to attendance, self-concept, attitudes toward school, and appropriate behavior.

The relationship between pupil control beliefs and student self-concepts, attitudes, and motivation have also been replicated by studies using the PCI Form. Lunenberg (1983) administered the PCI Form and the Self-Concept As A Learner Scale (SCAL) to 2,663 fifth-grade students in 35 schools. Coefficients of correlation between mean scores indicated a significant relationship between the school's pupil control ideology and the overall self-concept and task motivation of the students.

Lunenberg and Stouten (1983) examined the relationship between teachers' pupil control ideology and pupils' projected feelings towards their teachers. Sampling 131 classes of fourth- through sixth-grade students ($N = 3900$), they administered the PCI Form and the Draw-A-Teacher technique to determine results. They found pupil control ideology to be the single best predictor of student rejection and hostility. Teacher gender and grade level were also significantly related.

The PCI Form (Willower, Eidell, & Hoy, 1967, 1973) is used to measure pupil control ideology in the present study.

Research Related to Teacher Stress

The teachers' perception of job-related stress has been found to relate significantly with teacher performance in the classroom. Blase (1986) developed the Teacher Stress Inventory (TSI) and administered it to 392 elementary, middle, junior, and high school teachers from four regions of the United States. The results of the data indicated that teachers' stress levels correlated with diminished levels of tolerance, patience, caring, and involvement with their students. Work stress was linked with strong negative feelings in teachers, and the result of its overall impact was reduced goal achievement behavior with students.

A number of earlier researchers also reported relationships between teacher anxiety and teacher behavior in the classroom. Koon (1971) measured teacher anxiety with the Test Anxiety Questionnaire (Mandler & Sarason, 1952) and, utilizing direct behavioral observation, structured by the Joyce-Harootunian system for categorizing teacher communication, compared these results to teacher-student interactions. Analysis of variance revealed a significant difference in the task-oriented behaviors of 12 high and 12 low-anxiety student teachers, individually instructing fourth-grade students. High-anxiety teachers tended to be less tolerant, less patient, and less involved with the fourth graders. Additionally, they used fewer positive reinforcement behaviors with students they believed to be competent.

In an attempt to discover whether relationships exist between teacher personality traits and success in classroom teaching, Mattson (1974) studied 73 student teachers teaching in 35 northern secondary schools. Teacher effectiveness data were collected using student rating measures based on the Hoyt-Grim Pupil Reaction Inventory (PRI), in which students respond (agree, disagree, no opinion) to 200 statements regarding their teachers and classroom experiences (e.g., "This student teacher often doesn't seem to know I'm here." "We work in class, but we have fun too."). Henjum (1967) reported the PRI to be a satisfactory assessment of teacher effectiveness. The Cattell Sixteen Personality Factor Questionnaire was used to measure teacher personality traits. Product moment correlation coefficients were computed between the two instruments. After controlling for teaching level, subject matter area, and size of community, the data revealed low-anxiety teachers to be rated significantly higher in teaching effectiveness.

Investigations have been conducted linking teacher anxiety, which has been defined as a component of teacher stress (Kyriacou & Sutcliffe, 1977, p. 299), with student behavior. One study found that teachers with high anxiety tend to have students with high anxiety. Using a sample of 10 teachers and their 234 third-grade students, Doyal and Forsyth (1973) reported a positive correlation between teachers' anxiety levels and their students' anxiety levels. They utilized the Taylor Manifest Anxiety Scale (Taylor,

1953) to measure teacher anxiety levels and the Test Anxiety Scale for Children (Sarason et al., 1960) to measure student anxiety levels. Mean scores were computed for students and were correlated (Pearson) with teachers' scores. The results indicated that teachers' manifest anxiety influenced their students' test-anxiety levels.

Finally, a relationship between teacher stress and student achievement has also been reported. Heil and Washburne (1962) and Osborne (1968) both found achievement to be lower for the students of high-anxious teachers than for those of low-anxious teachers.

Choosing as their research goal to discover whether different types of children would show measured growth under different types of teachers, Heil and Washburne (1962) identified 33 classrooms of children from grades four, five, and six, who were equally divided between low, middle, and high socioeconomic status. Children were categorized by four instruments, the Otis Quick Score Intelligence Test, the Stanford Achievement Test, the Ohio Social Acceptance Scale, and the Brooklyn College Test of Children's Feelings. Fifty-one teachers, two from each of the three grades in nine public schools, were classified, using four instruments, the Teacher Education Examination Program, the Manifold Interest Schedule, the Brooklyn College Teacher Observation Forms, and the Brooklyn College Interaction with Children Test. Teachers were classified as A types (turbulent, impulsive), B types (self-controlled, work-oriented), and C types (stressful, anxious, fearful).

Out of seven final results, Heil and Washburne found "the most striking and significant result" to be the difference in children's growth factor (p. 349). Children with teachers in the type B category made significantly greater academic growth gain than did those with teachers who were classified as stressful, type C. This was found to be true for all four categories of children.

Osborne (1973) conducted a study in which she compared elementary school student's performances on spelling tests. She found achievement to be lower for students of high-anxious teachers than for students of low-anxious teachers. Results revealed that teacher ineffectiveness in promoting student achievement was not equally pervasive in classrooms of high-anxious teachers. Rather, teachers are differentially effective with high-anxious and low-anxious students. That is, although high-anxious and low-anxious students of low-anxious teachers performed equally well on spelling tests, high-anxious students of high-anxious teachers performed less well than their low-anxious counterparts.

Burnout, defined as the syndrome resulting from prolonged teacher stress (Kyriacou, 1987, p. 146), has also been found to relate significantly with student achievement. Dworkin (1985) sampled over 500 teachers and 2,300 elementary students (grades 4-6) in order to assess the impact of teacher burnout on student achievement and attendance. Using the Iowa Test of Basic Skills (ITBS), Dworkin found that bright children (students who scored at

least one standard deviation above their age peers during the previous academic year on the ITBS) were adversely affected by teacher burnout. Bright students assigned to burned-out teachers attained nearly two months less in academic achievement per year on the standardized test than did equally talented students assigned to teachers who were not burned-out.

Research on Related Demographics Variables

Researchers have found at least four demographic variables to be related to one or more of the four teacher belief constructs examined by the present study. These variables include the teacher's gender, years of experience, grade level taught, and highest degree earned. The following studies reveal instances of these relationships.

Research Related to Gender

Gender differences have been found to relate to the teacher's sense of efficacy. Greenwood, Olejnik, and Parkay (1990) investigated the four teacher efficacy belief patterns of 250 teachers which emerged from responses based on the two efficacy items developed by the Rand Corporation. The four patterns included teachers whose efficacy beliefs were: (a) low teacher and low personal, (b) high teacher and low personal, (c) high teacher and high personal, and (d) low teacher and high personal. They found significantly more ($p < .002$) female teachers responding to the pattern three (high teacher and high personal) teacher efficacy beliefs.

Garrett (1977), in a study of 373 teachers, investigated gender as it relates to teachers' perceptions of 20 teacher performance factors related to teacher locus of control. Half of the factors described teacher-controlled and half non-teacher-controlled performance. Significantly more female teachers ($p < .05$) were found to relate teacher-controlled factors to effective teaching. For example, female teachers rated as extremely high such teacher-controlled factors as the need for knowledge of subject areas taught, and understanding of self and personal motives, whereas male teachers' ratings of the importance of these factors to effective teaching were moderate. On the other hand, female teachers rated as extremely low the importance of assignment of more academically talented students to one's class, although males rated this non-teacher-controlled factor as moderately important.

Pupil control ideology beliefs have also been found to relate to teacher gender. Packard (1988), in a review of the pupil control studies, stated that one of the most frequently reported findings of the PCI studies (27 different investigations) is that females are more humanistic than males. Some instances of these results are found in the studies of Bean (1972) and Budzik (1971). Bean focused on student perceptions of the relationship between teachers' pupil control ideology beliefs and their classroom behaviors. Bean collected data from 72 teachers and 1,426 students, and found male teachers to be significantly

correlated with students' perceptions of authoritarian classroom behavior and custodial pupil control ideology beliefs. Budzik (1971), reporting on data from 595 teachers from 11 secondary schools, found female teachers to be more humanistic in their pupil control ideology beliefs than their male counterparts.

Research Related to Teaching Experience

Teacher beliefs regarding efficacy, locus of control, and stress have been found by researchers to relate to the number of years of teaching experienced by teachers. From the results of a pilot study, Gibson and Brown (1982) reported a negative correlation ($r = -.23$) between teaching efficacy scores and years of experience which occurred across groups of preservice and experienced teachers. Using the TES, they studied preservice teachers at various levels of training, as well as inservice teachers with varied amount of teaching experience. They stated that teaching efficacy appears to generally decrease with experience.

In related research, Hutchins (1987) conducted an exploratory study of teachers' thoughts and decision-making behaviors. Hutchins videotaped English lessons of six teachers paired by experience and inexperience. Teachers responded at 20 different places in the lesson concerning their thoughts and decisions. Applying the data to the McNair system for content analysis, Hutchins determined that experienced and inexperienced teachers' beliefs regarding a good lesson differ. The inexperienced teachers' perceptions were related to discipline, whereas the

experienced teachers' beliefs were related to the learning process.

Leming (1981) found a relationship between years of teaching experience and the teachers' locus of control beliefs. Leming collected data from 199 teachers in 60 northeastern school districts, including 95 different schools. Using Rotter's I-E scale, Leming found a significant correlation ($p < .001$) between teaching experience and internal locus of control beliefs.

Researchers have also found teaching experience to be related to pupil control ideology beliefs. Hoy (1968) studied 82 elementary and 93 secondary student teachers. He administered the PCI to the teachers before their practice teaching began, again after practice teaching, and again after one year of teaching. Hoy reported that beginning teachers were significantly ($p < .01$) more custodial after teaching for one year. In a later study with 112 secondary college seniors, Hoy and Rees (1977) reached the same conclusion utilizing the Rokeach Dogmatism Scale, the Work Environment Preference Schedule (WEPS), and the PCI. These students responded to the battery prior to beginning their student teaching and again immediately after student teaching. The student teachers were reported to be significantly more custodial ($p < .01$) in the pupil control ideology beliefs after student teaching.

Holt, Fine, and Tollefson (1987) found a relationship between teacher stress and years of experience. They administered the Teaching Events Stress Inventory and the

Maslach Burnout Inventory to 211 elementary teachers. They reported significantly higher frequencies ($p < .01$) of high stress and high burnout for teachers with five to ten years of experience than for teachers with one to five years of teaching experience.

Teacher anxiety, a concept used to define teacher stress, has been observed to be widespread among beginning teachers. In a review of teacher anxiety, Coates and Thoresen (1976) named 15 studies which were concerned with anxiety in the beginning teacher. Most studies named student discipline and control as the major source of concern for beginning teachers.

Research Related to Highest Degrees Earned

Research has revealed the teachers' sense of efficacy to be related to differences in training of preservice teachers. Gibson and Brown (1982) administered the TES to preservice teachers at varying stages of study. Comparing mean scores they found that personal efficacy scores increased as training increased, however the same scores were found to decrease again after student teaching.

In related research, Hoover-Dempsey, Bassler, and Brissie (1987) studied 1,003 teachers and 66 principals in 66 mid-southern elementary schools to find the best predictors of parent involvement in schools. Data based on background and opinion questionnaires revealed teachers' degree levels to be significantly correlated with three variables, SES, teacher efficacy, and parent-teacher conferences, the highest being parent-teacher conferences

($r = .46$). Teachers with advanced degrees and higher efficacy beliefs were more likely to encourage and to be aware of the need for more parental involvement in schools to ensure increased learning effectiveness.

Research Related to Grade Level Taught

Researchers have reported teachers' beliefs regarding efficacy, pupil control, and stress to be related to the grade levels they teach. Greenwood, Olejnik, and Parkay (1990) classified 250 teachers into four efficacy belief pattern groups (See teacher gender above). They found a significant relationship ($p < .0002$) between grade levels taught and teacher efficacy patterns. Their data revealed that nearly twice as many elementary teachers (67%) fell into the high personal and high teacher (pattern 3) efficacy category than did middle school teachers (34%), and the percentage of high school teachers falling into the high PE, high TE category totaled 49%.

Finally, beliefs regarding feelings of teacher burnout, the common symptom of prolonged teacher stress, were also found to differ depending on grade levels taught by teachers. In his 1984 study of 365 teachers, Farber found grade level to be a significant variable ($p < .05$) related to teachers' perceived beliefs concerning burnout, with the highest feelings of burnout found among teachers of junior high or middle school grades.

Research on the Relatedness of the Four Belief Systems

A number of studies have found significant interrelationships between the belief systems examined by

this study. In the studies that follow researchers have assessed the relationships among two or more of the four belief systems.

Teacher efficacy and teacher locus of control. Using the TLC Scale (Rose & Medway, 1981a), Ashton, Webb, and Doda (1983) studied 48 high school basic skills teachers. They reported a significant correlation between the teacher's personal efficacy and perceived belief in her/his own responsibility for the student's success or failure.

Ashton and Webb (1986), after administering a lengthy questionnaire to 35 volunteer middle and junior high school teachers, found that 35% of the teachers receiving the lowest sense of efficacy scores also attributed academic failure to their students, rather than to their own control.

Teacher efficacy and pupil control ideology. A relationship between teacher efficacy and pupil control ideology was found by Barfield and Burlingame (1974), using the PCI Form (Willower, Eidell, & Hoy, 1967, 1973) and the Teacher Efficacy Scale, an instrument developed by the Political Behavior Research team of the University of Michigan. They measured a sample of 275 teachers, elementary through high school, in both high and low socioeconomic status schools. Their findings indicated that low sense of efficacy teachers were characterized by custodial pupil control orientations significantly more often than were high sense of efficacy teachers.

Teacher efficacy and teacher stress. In a 1988 study, Brissie, Hoover-Dempsey, and Bassler investigated the sense

of efficacy and stress levels of 1,213 teachers from eight school districts. They utilized the Teacher Information Questionnaire, the Teacher Opinion Questionnaire, and the School Information Questionnaire (Hoover-Dempsey, Bassler, & Brissie, 1987). Results of beta weights indicated that teachers with high sense of efficacy beliefs also reported lower stress levels.

Teacher locus of control and pupil control ideology.

Teacher locus of control and pupil control orientations were correlated, using the Locus of Control Scale for Teachers (Sadowski et al., 1982) and the Origin-Climate Questionnaire (deCharms, 1976). Sadowski and Woodward (1983), testing 13 middle school teachers and their 78 students, found that teachers' locus of control scores were related to students' perceptions of classroom climates. Internal teachers' classroom climates were perceived to be more origin- than pawn-oriented.

Teacher locus of control and teacher stress. Halpin, Harris, and Halpin (1985) studied 130 elementary through high school teachers, from three different states, Alabama, Kansas, and Michigan. They administered the Teacher Locus of Control Scale (Hall, Smitley, Villeme, & Schwartz, 1980) and the Teacher Occupational Stress Factor Questionnaire (Clark, 1980) and found a significant multiple correlation between stress factors and locus of control. Those teachers who reported the least stress were found to have internal locus of control scores.

In 1986, Sadowski, Blackwell, and Willard reported the findings of their investigation of the locus of control and stress factors of 27 preservice teachers. Scores from their Locus of Control scale for Teachers (1982) and the Perceived Stress Inventory (Cichon & Koff, 1980) returned a significant negative correlation ($r = -.38$, $p < .05$) between locus of control and perceived stress.

Pupil control ideology and teacher stress. Albertson and Kagan (1987) studied 231 teachers of elementary through post-secondary grade levels. They measured teacher stress with the Teacher Occupational Stress Factor Questionnaire (Clark, 1980), and pupil control beliefs with the Pupil Control Ideology Form (Willow, Eidell, & Hoy, 1967, 1973). Their results indicated that pupil control scores were significantly correlated with all of the occupational stress scales. The more custodial and authoritarian teachers tended to be, the greater were their occupational stress perceptions.

Albertson and Kagan's study was a replication of earlier research conducted by Harris, Halpin, and Halpin (1985), who discovered, also utilizing the PCI and the TOSFQ, that high stress levels were associated with the custodial/authoritarian pupil control beliefs among a sample of 130 teachers, representing all grade levels including special education assignments.

Teacher stress, locus of control, and efficacy. Finally, Parkay, Greenwood, Olejnik, and Proller (1988) found significant correlations between teacher stress,

teacher locus of control, and teacher efficacy. They identified 18 high and low stress schools, from among 246 elementary through high school buildings. Three hundred twenty-one teachers from the identified schools responded to the Teacher Locus of Control Scale (Rose & Medway, 1981a), the Rand Corporation teacher efficacy items, and the Wilson Stress Profile for Teachers (Wilson, 1979). Findings indicated that internal locus of control was negatively correlated with stress, as were total efficacy scores; that is, internal teachers with high sense of efficacy scores experienced less job-related stress. Additionally, high sense of efficacy scores showed significant positive correlations with internal locus of control scores.

Summary

Seven bodies of literature were reviewed in support of the view that teacher belief systems are related to teacher effectiveness. The following conclusions are drawn from this literature:

1. A considerable body of literature supports the A-B-C-D Link Model of teacher effectiveness. These links are (A) teacher beliefs, (B) teacher behavior, (C) student behavior, and (D) student achievement.
2. Teacher efficacy (Link A) is a teacher belief system that is strongly related to both teacher behavior (Link B) and student achievement (Link D).
3. Teacher locus of control beliefs (Link A) are strongly related to teacher behavior (Link B), student behavior (Link C), and student achievement (Link D).

4. Teacher beliefs regarding pupil control ideology (Link A) are strongly related to teacher behavior (Link B), student behavior (Link C), and student achievement (Link D).

5. Teacher beliefs about job-related stress (Link A) relate strongly to teacher behavior (Link B), and to student achievement (Link D), especially among the gifted and high achieving students.

6. Four demographic variables have been found to be related to the four teacher belief systems. These include gender, years of teaching experience, grade level taught, and highest degree earned. Gender has been found to be related to teacher locus of control, teacher efficacy, and pupil control ideology. Teaching experience has been found to be related to teacher efficacy, teacher locus of control, pupil control ideology, and teacher stress. Highest degree earned by teachers has been found to be related to teacher efficacy. Grade level differences have been found to be related to teacher efficacy and teacher stress.

7. Each of the four teacher belief systems used in this study has been correlated with one or more of the other belief systems, such that all, without exception, are interrelated. That is, teacher efficacy has been found to be related to teacher locus of control, to pupil control ideology, as well as to teacher stress. Teacher locus of control has been found to be related to pupil control ideology and also to teacher stress and burnout. Pupil control ideology has been found to correlate with teacher stress. Finally, teacher stress has been correlated with both teacher locus and teacher efficacy.

CHAPTER III METHODOLOGY

The purpose of this study was to determine whether a sample of the Teachers of the Year population may be differentiated from a matched sample of inservice teachers on the basis of their scores on four instruments designed to measure teachers' beliefs regarding efficacy, locus of control, pupil control, and stress. The hypotheses were stated in terms of the dependent measure, status as a Teacher of the Year or regular classroom teacher.

The following hypotheses were tested:

1. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Efficacy Scale (TES), the Teacher Locus of Control Scale (TLC), the Pupil Control Ideology Form (PCI), or the Wilson Stress Profile for Teachers (WSPT).

2. Whether a teacher is selected as Teacher of the Year will not be significantly related to the teacher's gender, years of teaching experience, grade level taught, or highest degree earned.

3. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Efficacy Scale by gender, years of teaching experience, grade level taught, or highest degree earned.

4. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Locus of Control Scale by gender, years of teaching experience, grade level taught, or highest degree earned.

5. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Pupil Control Ideology Form by gender, years of teaching experience, grade level taught, or highest degree earned.

6. Whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Wilson Stress Profile for Teachers by gender, years of teaching experience, grade level taught, or highest degree earned.

Subject Selection

Because the purpose of this study was to determine whether belief systems of teachers selected for their effectiveness are significantly different from those of other comparison teachers, a population of teachers defined as being effective was sampled. This population is the Teachers of the Year. Recipients of this award are judged by superintendents, principals, colleagues, students, parents, and civic leaders to be among the nation's most effective teachers.

The control group for this study was drawn from a sample of inservice teachers serving in public school districts around the country, who were matched with the 1987-1990 Teachers of the Year by state, school enrollment, school type, and subject or grade level taught. Specifically, schools in which TOYs taught were located in state school directories (QED, 1988, 1989, 1990), which list school enrollment and type (e.g., P-3; K-6; 7-9; 10-12, Sp. ed.). Subjects or grade levels taught by TOYs were included in the award announcements found in the Teacher's Almanac (Harris & Harris, 1988, 1989) and with lists of 1989 and 1990 TOYs sent to me by the director of the Teacher of the Year program in Washington, D.C. Schools of the same type and with the same, or as near the same as possible, enrollment as those of each TOY were located in each TOY's

state. Inservice teachers were contacted by sending packets to these schools, addressed to a teacher of the same subject or grade level taught by the TOY being matched (e.g., Third Grade Teacher; Grade Seven Math Teacher; Music Teacher). The subjects or grade levels actually taught by the responding inservice teachers were monitored by demographic information sheets returned with their answer sheets.

Sampling and Data Collection

Matching and sample size. It was expected that matching, as well as the use of large samples ($N = 100$) would provide the type of representation of teachers necessary to accomplish two objectives for this study: First, large samples would ensure the inclusion of the four demographic variables being examined by this study: gender, years of teaching experience, grade level taught, and highest degree earned.

The second concern involved significant differences in pupil control ideology (Appleberry, 1969; Larkin, 1973; Leacock, 1969), teacher efficacy and locus of control (Anderson, 1968; McPherson, 1972; Hoover-Dempsey, Bassler, & Brissie, 1987), and teacher stress (Farber, 1984) reported for teachers, with respect to size and demographic characteristics of community or school district. Matching on school enrollment and type was used to control for the effects of these differences. It was expected that these sampling procedures would enhance the generalizability of the results of this study.

Response rates for questionnaires reported for the general public may be expected to be approximately 40% (Moser, 1961). Therefore, twice as many subjects were contacted in order to obtain the desired data return.

Although not all states and territories always submit a winner, a total of approximately 53 TOYs, one from each state or territory, are generally chosen each year. From this group, three finalists are selected, and a national winner is chosen each year, making a total of 42 national TOYs to date. It was, therefore, necessary to go back four years in order to contact enough TOYs to make up the desired sample size ($N = 100$).

A packet containing a cover letter (Appendix A), a letter of endorsement from the Dean of the College of Education (Appendix B), a copy of the combined four teacher belief self-report instruments called the Teacher Belief Questionnaire (The instruments were used and printed with permission of the authors.) (Appendix C), a demographic information questionnaire (Appendix D), and a customized answer sheet, together with a stamped, addressed return envelope was mailed to state winners from 1987-1990, as well as to national finalists from 1960 to the present, making a total of 213 mailings to TOYs.

In order to maintain consistency with the effective teachers (TOYs) sample, which includes teachers from all states in the nation, the control group of inservice teachers were also matched by state. Further consistency was achieved by matching for grade level or subject taught.

Two hundred thirteen packets were mailed to ITs, making a total mailing of 426 packets.

Additional response rate procedures. Parten (1966) states that endorsements signed by prominent individuals add prestige and credibility to a questionnaire and may increase the return rate. Therefore, a cover letter endorsing the study, signed by the Dean of the School of Education, University of Florida, was included in the mailing packet.

Yellow paper was used for the questionnaire, as well as different colored answer sheets for each sample to ensure correct identification of groups. Commemorative stamps were used on the return envelopes. These further innovations were suggested to promote higher return rate (Parten, 1966).

Confidentiality was ensured by assigning a number to the information and answer sheets designated for return in each packet. Names were excluded from all questionnaires and appeared only on the packet envelopes. Names were coded with numbers for the purpose of assessing returns. This procedure was explained to the subjects in the cover letter.

Follow-up procedures. Two weeks after the first packets were mailed, a return of approximately 25% was reached, and a follow-up post card urging participation was mailed to all nonparticipants (Appendix E). One month after the first mailing, with the return at approximately 30%, a letter was mailed to nonparticipants which included a stamped, addressed post card for requesting an additional packet (Appendices F and G). A total of 16 additional

packets were subsequently requested and mailed. The final return of 43% included 93 TOY and 90 IT questionnaires returned, with a final usable sample of 88 and 92, respectively. Of the total data, 40 matched pairs were returned. Because use of the matched pairs alone would significantly reduce the total sample size, it was decided to use all of the returned data.

Instruments

Four instruments were employed in this study: the Teacher Efficacy Scale (TES), the Teacher Locus of Control Scale (TLC), the Pupil Control Ideology Form (PCI), and the Wilson Stress Profile for Teachers (WSPT). In addition to the four teacher belief instruments, a demographic information form called Information Sheet was used to obtain data regarding each teacher's gender, grade level taught, years of teaching experience, and highest degree earned.

Teacher Efficacy Scale

The Teacher Efficacy Scale (TES) (Gibson, 1983) was developed to measure the teacher's level of belief in: (a) personal efficacy, that s(he) has the skills and abilities to bring about student learning, as well as (b) teacher efficacy, that the teacher is limited by external factors, such as home environment. The two factors measured by this scale, teacher and personal efficacy, were identified through factor analysis (Gibson & Dembo, 1984).

Efficacy on the TES is measured by indication of respondent agreement levels on questions of teacher

efficacy, (e.g., "Even a teacher with good teaching abilities may not reach many students.") or on questions of personal efficacy, (e.g., "When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student."). The 30 items on the TES require a Likert-type response which may range from one, strongly disagree (SD), to six, strongly agree (SA). A total score is derived from responses to items.

Reliability. Gibson and Dembo (1984) report internal consistency reliability coefficients of .78 for the personal efficacy factor, and .75 for the teaching efficacy factor, whereas .79 was the internal consistency reliability coefficient reported for the total scale.

Validity. The results of a multitrait-multimethod analysis (Gibson & Dembo, 1984) revealed convergent, as well as discriminant validity for the TES. A significant correlation of .42 ($p < .05$) was reported for convergent validity, and teacher efficacy was significantly discriminated from teacher verbal ability and flexibility.

Although efficacy research in the past has yielded significant relationship to teacher effectiveness and student achievement, much of this research used only two items to measure these results (Armor, et al., 1976; Berman, et al., 1977). The use of the two-item Rand measure alone has received criticism (Trentham, Silvern, & Brogdon, 1985). Therefore, the use of the TES, a 30-item, multidimensional instrument was used, because it may be a more sensitive and reliable measure of teacher efficacy.

Teacher Locus of Control Scale

Developed by Rose and Medway (1981a), the Teacher Locus of Control Scale (TLC) was designed to measure teachers' beliefs concerning student successes (I+) and student failures (I-) in the classroom. The test consists of 28 forced-choice items, 14 of which describe successful situations and 14 failure, yielding two independent scores of zero to fourteen points each. A total score is generated by adding the I+ and I- scores. High scores indicate internal locus of control, or teacher-owned responsibility for the result of the learning event.

Reliability. The Kuder-Richardson-20 reliabilities were .81 for the (I-) and .71 for the (I+) subscales for internal consistency of the TLC scale (Rose & Medway, 1981).

Reliability for the TLC was also found by Soh (1986), using Cronbach's alpha. Soh also reported TLC to have substantially high reliability when used in a different cultural context.

Validity. Rose and Medway (1981a) confirmed validity of the TLC, referring to the results of the federally funded education project of Berman et al. (1977), in which the continuation of trained project implementation behaviors by internal teachers was predictable.

Validity of the TLC when used in a different culture (Singapore) was also confirmed by Soh (1986), who reported positive relationships with several attitudinal measures. Additionally, Soh (1988), using discriminant analysis, found

the TLC to have good predictive validity in its ability to discriminate internals from externals.

When compared to Rotter's I-E scale, the TLC yielded higher correlations with classroom teaching behaviors (Rose & Medway, 1981). Behaviors characteristic of teachers measured internal in locus of control have been observed to maximize teaching effectiveness.

Pupil Control Ideology Form

The Pupil Control Ideology Form (PCI) was developed by Willower, Eidell, and Hoy (1967, 1973). It was designed to measure the teacher's belief concerning pupil control on a bipolar continuum from humanistic to custodial. A humanistic orientation toward pupil control stresses acceptance and trust of students, combined with optimism for the students' ability to be self-disciplining. A custodial orientation emphasizes the maintenance of order and teacher control, distrust of students, and a moralistic attitude towards misbehavior and deviance from teacher-made rules. A sample custodially-oriented question is "Pupils often misbehave in order to make the teacher look bad." A question oriented towards more humanistic control beliefs is "Pupils can be trusted to work together without supervision."

Beginning as a 57-item construct, the PCI was adapted from an instrument designed by Gilbert and Levinson (1957) to measure control ideologies used with patients in mental hospitals. Following item analysis using biserial

correlation, 20 items were retained in the current PCI form. The minimum biserial coefficient was .325, with an average of .43.

Using a Likert-type answer design, the PCI offers response categories scored from five to one, strongly agree (SA) to strongly disagree (SD), with scoring reversed on items five and thirteen, which are positive to reflect the humanistic control ideology. A total cumulative score is calculated from a theoretical range of 20 to 100, with the higher score indicating a more custodial point of view.

Reliability. Split-half reliability coefficient calculations correlating even-item subscores with odd-item subscores resulted in a Pearson product-moment coefficient of .91 and a corrected Spearman-Brown coefficient of .95 (Willower, Eidell, & Hoy, 1967). In a second study (Willower, Eidell, & Hoy, 1973), repetition of the same technique produced coefficients of .83 and .91 respectively.

Halpin, Goldenberg, and Halpin (1974) reported a stability coefficient of .86 over a seven day period, when administering the PCI form to college students. The PCI has also been found to correlate well with itself, having internal consistency correlations ranging from .61 to .95 (Eidell, 1965; Murad, 1974; Zak & Horowitz, 1978; Zelei, 1971).

Validity. Validity studies of the PCI are based on correlations of seven principals' judgments of the pupil control orientations of 50 faculty members. Using a one-tailed t test ($t = 2.639$) Willower, Eidell, & Hoy (1967)

determined that the difference in the means of two independent samples was significant ($p < .01$). A cross-validation of 40 teachers' scores from 7 schools, using principals' judgments was again significant ($t = 3.418$) at ($p < .001$) (Willower, Eidell, & Hoy, 1973).

Construct validity of the PCI was confirmed by Graham, Halpin, Harris, and Benson (1985), who conducted an exploratory factor analysis to determine factor structure, followed by a confirmatory factor analysis procedure to test the models developed from the first procedure. The obtained alpha coefficients yielded evidence consistent with that of Willower, Eidell, and Hoy (1967, 1973) which presents the PCI as a unidimensional scale with one total score, although the Graham, Halpin, Harris, and Benson model would reduce the PCI to 10 items. A replication of this study by Graham, Benson, and Henry (1985) was congruent with the results originally obtained by Graham, Halpin, Harris, and Benson (1985). It was concluded that the PCI is a unidimensional measure, but that it could be reduced further to include simply 10 items.

Wilson Stress Profile for Teachers

The WSPT, developed by Wilson (1979), was designed to measure stress levels perceived by teachers in seven different categories, including Student Behavior (SB), Employee/Administrator relations (EAR), Teacher/Teacher relations (TTR), Teacher/Parent relations (TPR), Time Management (TM), Intrapersonal Conflicts (IC), Physical

Symptoms of stress (PSS), Psychological/Emotional Symptoms of stress (PESS), and Stress Management Techniques (SMT). Nine subscale scores are obtained, a score for each category and an overall stress score. Individual scores may range from low stress (1-8) to high stress (16-20), with total scores ranging from a low score of 36 to a high score of 180. Teachers respond to 36 questions with five Likert-type answers classified from "never" to "very often".

Reliability. Wilson (1979) reported a test-retest reliability coefficient, calculated by a Spearman's Rho, of .68 ($p < .01$). Internal consistency was also reported by Luh (1989). Luh found a coefficient of .92 for the total inventory, using Cronbach's alpha. The nine subscale results reported by Luh were .69, .84, .61, .61, .83, .76, .84, .87, and .72, respectively. A factor analysis, also conducted by Luh (1989), supported the former hypothesis that a single construct is being measured by the WSPT, confirming that it is a unidimensional scale.

Validity. Construct validity was measured by Wilson (1979) by correlating the pre-scores on the WSPT profile with cumulative scores on the State-Trait Anxiety Index (STAI). The Rho value resulted in .50 ($p < .01$).

The results of a discriminant analysis (Luh, 1989) also indicated good concurrent validity for the WSPT.

Statistical Analysis

A multivariate procedure commonly used to classify individuals into two different populations is logistic

regression (Afifi & Clark, 1984; Efron, 1975; Press & Wilson, 1978). An alternative to the discriminant analysis method of classification, this procedure is referred to as the multiple logistic regression equation (Afifi & Clark, 1984) and it assumes the model:

$$\ln (\text{Odds}) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots + \beta_p x_p + \epsilon$$

Logistic regression analysis makes the assumption that $\ln (\text{odds})$ is related linearly to the independent variables, but it makes no assumption regarding the distribution of the X variables; these may be either discrete or continuous. Consequently, this procedure is preferred over discriminant analysis when categorical and continuous variables are used, because it is considered to be relatively robust in circumstances where all variables are not multivariate normal (Halperin, Blackwelder, & Verter, 1971; Press & Wilson, 1978).

The logistic regression procedure was considered the best form of analysis for the purposes of the present study, therefore, because dichotomous and continuous demographic variables are included, along with forced-choice and Likert-type scoring methods, in the analysis of the data.

The problem presented by the present study was reduced to one of analyzing an independent set of variables (X) in such a way as to test the hypothesis that a particular profile based on the (X) measures resembled that of the members of Category A (Teachers of the Year) more closely than that of Category B (Inservice Teachers).

The analysis of this study assumed the following model:

$$\begin{aligned} \ln = & \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_6^2 + \\ & \beta_8 x_7 + \beta_9 x_8 + \beta_{10} x_1 x_5 + \beta_{11} x_1 x_6 + \beta_{12} x_1 x_6^2 + \beta_{13} x_1 x_7 + \\ & \beta_{14} x_1 x_8 + \beta_{15} x_2 x_5 + \beta_{16} x_2 x_6 + \beta_{17} x_2 x_6^2 + \beta_{18} x_2 x_7 + \beta_{19} x_2 x_8 + \\ & \beta_{20} x_3 x_5 + \beta_{21} x_3 x_6 + \beta_{22} x_3 x_6^2 + \beta_{23} x_3 x_7 + \beta_{24} x_3 x_8 + \beta_{25} x_4 x_5 + \\ & \beta_{26} x_4 x_6 + \beta_{27} x_4 x_6^2 + \beta_{28} x_4 x_7 + \beta_{29} x_4 x_8 + \epsilon \end{aligned}$$

where:

\ln = TOYs (Teachers of the Year) or

ITs (Inservice Teachers)

x_1 = TES (Teacher Efficacy Scale) scores

x_2 = TLC (Teacher Locus of Control Scale) scores

x_3 = PCI (Pupil Control Ideology Form) scores

x_4 = WSPT (Wilson Stress Profile for Teachers) scores

x_5 = SEX

x_6 = YTE (years of teaching experience)

* x_6^2 = Quadratic test of YTE

x_7 = GLT (grade level taught)

x_8 = HDE (highest degree earned)

and:

The tests for β_1 through β_4 addressed H_1

The tests for β_5 through β_9 addressed H_2

The tests for β_{10} through β_{14} addressed H_3

The tests for β_{15} through β_{19} addressed H_4

The tests for β_{20} through β_{24} addressed H_5

The tests for β_{25} through β_{29} addressed H_6

*Note - The purpose of the quadratic test (x_6^2) of years of teaching experience (YTE) was to determine whether a significant curvilinear trend was present in the years of teaching experience data.

Logistic regression programs may be found in both SAS and BMDP statistics packages. Two logistic regression programs are included in SAS, LOGIST and PREDICT. This study used LOGIST, because this procedure assigns categories, provides stepwise elimination statistics, and yields D statistics which functions like R^2 , that is, it indicates the predictive strength of each variable.

CHAPTER IV RESULTS

Introduction

The purpose of this study was to examine differences between the Teachers of the Year, as representatives of effective classroom teachers, and a comparison sample of regular classroom teachers in terms of four teacher belief systems related to teacher effectiveness: (a) teacher efficacy, (b) teacher locus of control, (c) pupil control ideology, and (d) teacher stress, and also to examine whether these differences would be related to the teacher's gender, years of teaching experience, grade level taught, or highest degree earned.

A sample of the Teachers of the Year ($n = 88$) and a sample of inservice teachers ($n = 92$) responded to the Teacher Belief Questionnaire, a composite self-report instrument which combined four teacher belief instruments: the Teacher Efficacy Scale (TES), the Teacher Locus of Control Scale (TLC), the Pupil Control Ideology Form (PCI), and the Wilson Stress Profile for Teachers (WSPT), and to a demographic information sheet containing the variables revealed by the literature to be related to the teacher belief instruments, namely, the teacher's gender, years of teaching experience, grade level taught, and highest degree earned.

Descriptive Statistics

Percentages indicated that two thirds of the total sample of teachers were female. Nearly two-thirds of the total sample of teachers had acquired between 13 and 24 years of experience, and the other third was evenly divided between less than 12 or more than 25 years of experience. Over two thirds of the teachers had earned master's degrees or higher. More than half of the teachers taught high school, and the majority of the remaining half taught elementary level students. Subject areas taught included all elementary grades (K-6), 12 secondary subject areas, and special education. School enrollment size ranged from 21 students (special education center) to 2,425 students (urban high school).

All 52 states and territories are included in the total population of teachers, with approximately three to four teachers responding from each state. A comparison of descriptive data between the Teachers of the Year and the inservice teachers shows the two samples to be nearly matched by gender as well as types of schools reported. The mean for years of teaching experience indicates that Teachers of the Years, on average, have taught about three years longer than inservice teachers. Considerable difference is indicated between samples for highest degree earned, with fewer than one sixth of Teachers of the Year holding Bachelor's degrees, compared to more than a third of the inservice teachers. Subjects taught and school enrollment sizes were also very similar for the two samples.

These samples were found to be generalizable to the national teacher population. U.S. Department of Education statistics on public school faculties were nearly identical to the samples analyzed in the present study for all variables, with the single exception of highest degrees earned; approximately half of the national teacher population holds Bachelor's degrees, and the other half holds master's degrees (National Center for Education Statistics, 1989). Table 1 presents descriptive statistics of the foregoing variables. Descriptive statistics (means and standard deviations) showing differences between TOYs and ITs on teacher belief instruments may be found in Appendix H.

Logistic Multiple Regression Analysis

A general linear model was constructed to test the six hypotheses proposed by this study. A logistic multiple regression procedure (LOGIST) was used to analyze the difference between scores on the teacher belief instruments, the demographic variables, and all possible interactions between the instrument scores and demographic variables for Teachers of the Year and inservice teachers. The logistic regression procedure was chosen for analysis, because the data in this study include both categorical and continuous independent variables. Logistic regression allows the use of dummy coding for categorical variables and thus is robust for both types of data. Dummy coding was used to include the variables of gender, grade level taught, and highest

TABLE 1
PERCENTAGES FOR TEACHER CHARACTERISTICS AND ASSIGNMENTS

Variable	TOYs (n=88)	ITs (n=92)	Total (N=180)	1989 Natl
<u>GENDER</u>				
Male	32.9	33.6	33.5	31.2
Female	67.0	66.3	66.5	68.8
<u>YEARS TEACHING EXPERIENCE</u>				
1-12			18.3	
13-24	$\bar{X}=20$	$\bar{X}=17$	62.5	$\bar{X}=15$
25-44			18.2	
<u>HIGHEST DEGREE EARNED</u>				
Bachelor's Degree	14.7	39.1	26.9	48.3
Master's Degree or Higher	85.2	60.8	73.1	51.4
<u>GRADE LEVEL TAUGHT</u>				
Elementary	32.9	31.5	31.3	31.0
Junior High School	13.6	19.6	16.5	16.0
Senior High School	53.4	48.9	51.6	51.0
<u>SUBJECTS TAUGHT</u>				
Kindergarten-6th grade	22.7	28.3	25.5	31.0
Art	1.1	1.1	1.1	1.5
Business	1.1	---	.5	6.5
English	15.9	23.9	20.0	21.8
Foreign Language	2.3	2.2	2.2	3.7
Gifted	2.3	---	1.1	---
Home Economics	2.3	---	1.1	2.6
Social Studies	17.0	15.2	16.1	13.6
Math	6.8	5.4	6.1	19.2
Music	1.1	2.2	1.7	4.8
Reading	6.8	3.3	5.0	----
Science	13.6	14.1	13.9	11.0
Special Education	6.8	4.3	5.6	3.5
<u>SCHOOL ENROLLMENT</u>				
Under 100	3.3	2.2	2.7	8.8
100-199	6.7	4.3	5.5	11.2
200-299	8.9	5.4	7.1	12.6
300-399	8.9	8.7	8.8	14.7
400-499	3.3	13.0	8.2	13.8
500-599	11.1	10.9	11.0	11.4
600-699	13.3	9.8	11.5	8.0
700-799	5.6	7.6	6.6	5.6
800-999	8.9	14.1	11.5	6.0
1,000-1,499	17.8	13.0	15.4	5.3
1,500-1,999	8.9	7.6	8.2	1.7
2,000-2,999	3.3	3.3	3.3	.9

degree earned in the analysis; other variables were kept interval.

Responding to the expected curvilinear trend in years of teaching experience, a quadratic was applied to this variable to test for significance of this trend. The full model procedure included tests for eight main effects, a quadratic test of years of teaching experience, and twenty interactions.

No significance was indicated for main effects, interactions, or for the quadratic test in the full model procedure. The effects of the interrelatedness, or multicollinearity, among the four belief constructs were apparent in the analysis. This overlapping of main effects, together with the many interactions tested, combine to reduce power in the full model. These effects were responsible for the resulting lack of significance in the full model procedure. Results of the full interaction model are presented in Table 2.

A reduced model was constructed and analyzed next. This first reduced model is a test of the main effects after all interactions and the quadratic test have been removed. In this reduced model, significance for two variables was found. The results indicated significance for both pupil control ideology and highest degree earned. The Teachers of the Year are significantly more humanistic ($p < .01$) in their beliefs regarding pupil control orientation than are the inservice teachers, and they have earned a significantly greater number of degrees which are at the master's or

TABLE 2
FULL MODEL LOGISTIC REGRESSION SUMMARY

Variable	Beta	Std Err	Chi-Square	p
Intercept	16.25	14.57	1.24	.26
Teacher Efficacy	.05	.15	.13	.71
Teacher Locus of Control	-.24	.27	.81	.36
Pupil Control Orientation	-.23	.18	1.67	.19
Teacher Stress	-.06	.09	.51	.47
Gender	-5.16	5.27	.96	.32
Years Teaching Experience (YTE) Squared	-1.45 .03			
Highest Degree Earned	2.48	6.13	.16	.68
Senior High School	1.33	4.73	.08	.77
Junior High School	-.02	7.23	.00	.99
Tchr Eff x Gender	.02	.06	.13	.72
Tchr Eff x Yrs Tchg Exper	-.01			
Tchr Eff x (YTE)	.0004			
Tchr Eff x Highest Degree	.03	.06	.30	.58
Tchr Eff x Junior High	-.03	.08	.19	.66
Tchr Eff x Senior High	-.02	.05	.23	.63
Tchr LOC x Gender	.01	.09	.03	.87
Tchr LOC x Yrs Tchg Exper	.04			
Tchr LOC x (YTE)	-.001			
Tchr LOC x Highest Degree	.009	.09	.01	.92
Tchr LOC x Junior High	-.004	.13	.00	.97
Tchr LOC x Senior High	-.04	.08	.36	.54
Pupil Control x Gender	.05	.06	.57	.45
Pupil Control x Yrs Tchg Exper	.02			
Pupil Control x (YTE)	-.0007			
Pupil Control x Highest Degree	-.07	.06	1.33	.24
Pupil Control x Junior High	.02	.10	.05	.82
Pupil Control x Senior High	-.002	.05	.00	.97
Tchr Stress x Gender	.02	.03	.43	.51
Tchr Stress x Yrs Tchg Exper	.001			
Tchr Stress x (YTE)	.000004			
Tchr Stress x Highest Degree	.01	.04	.11	.73
Tchr Stress x Junior High	-.003	.04	.00	.94
Tchr Stress x Senior High	.003	.03	.01	.92

higher level ($p < .008$) than have the comparison teachers.

Recall in Table 1 that 85% of the TOYs had master's or

higher degrees, whereas only 61% of the ITs had master's or

higher degrees. The results of the first reduced model are presented in Table 3.

TABLE 3
LOGISTIC REGRESSION SUMMARY
REDUCED MODEL 1

Variable	Beta	Std Err	Chi-Square	p
Intercept	-.07	1.89	.00	.96
Teacher Efficacy	.01	.02	.55	.45
Teacher Locus of Control	.06	.03	3.34	.06
Pupil Control Orientation	-.05	.02	5.70	.01**
Teacher Stress	-.004	.01	.12	.72
Gender	.09	.39	.06	.81
Years Teaching Experience	.02	.02	1.05	.30
Highest Degree Earned	1.07	.40	6.83	.008**
Junior High School	.25	.55	.22	.64
Senior High School	.51	.43	1.41	.23

* $p < .05$ ** $p < .01$

Results of Logistic Regression Analyses

Statistical analysis has resulted in the rejection of two of the six hypotheses proposed by this study.

Hypothesis one states that whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Efficacy Scale (TES), the Teacher Locus of Control Scale (TLC), the Pupil Control Ideology Form (PCI), or the Wilson Stress Profile for Teachers (WSPT). Logistic multiple regression analysis

confirmed that selection as Teacher of the Year is significantly related to scores on the Pupil Control Ideology Form. Since scores on one of the teacher belief instruments tested by hypothesis one significantly differentiates the Teachers of the Year from the inservice teachers, hypothesis one is rejected. Humanistic beliefs regarding student control were found to be a significant predictor of those teachers who are likely to become Teachers of the Year.

Hypothesis two states that whether a teacher is selected as Teacher of the Year will not be significantly related to the teacher's gender, years of teaching experience, grade level taught, or highest degree earned. Logistic regression analysis confirmed that whether a teacher is selected as Teacher of the Year is significantly related to the highest degree earned by that teacher. Since one of the variables tested by hypothesis two significantly differentiates the Teachers of the Year from the inservice teachers, hypothesis two is rejected. It may be predicted that teachers who become Teachers of the Year will have earned a master's level or higher degree.

The effect of grade level taught may also be underestimated, because the initial sampling design matched TOYs and ITs on grade level taught. Although only 44.4% of the final sample were matched pairs, this probably biases the estimate of the grade level taught effect downward. Nevertheless, grade level taught was maintained in the model

to test its interaction with the teacher belief variables which would not be biased.

Hypothesis three states that whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Efficacy Scale by gender, years of teaching experience, grade level taught, or highest degree earned. None of these interactions, tested by the full model procedure, were found to be significant. Therefore, hypothesis three was accepted. The relationship of the teacher's sense of efficacy to selection as TOY is not related to his/her gender, years of teaching experience, grade level taught, or highest degree earned.

Hypothesis four states that whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Teacher Locus of Control Scale by gender, years of teaching experience, grade level taught, or highest degree earned. None of these interaction tests reached significance. Hypothesis four was, therefore, accepted. The relationship of selection as TOY to whether a teacher is internal or external in locus of control beliefs is not related to his/her gender, teaching experience, grade level taught, or highest degree earned.

Hypothesis five states that whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Pupil Control Ideology Form by gender, years of teaching experience, grade level taught, or highest degree earned. Tests for these interactions were not significant. Hypothesis five was accepted. The

relationship of selection as TOY to whether a teacher is humanistic or custodial in pupil control beliefs is not related to his/her gender, teaching experience, grade level taught, or highest degree earned.

Hypothesis six states that whether a teacher is selected as Teacher of the Year will not be significantly related to scores on the Wilson Stress Profile for Teachers by gender, years of teaching experience, grade level taught, or highest degree earned. No significance was found for tests of these interactions. Hypothesis six was accepted. The relationship of selection as TOY to a teacher's perceived level of job-related stress is not related to his/her gender, teaching experience, grade level taught, or highest degree earned.

Further Analyses

Because of the known interrelationships of the four teacher belief constructs, the model was reduced further to control for the likely canceling effect of the pupil control ideology instrument. This second reduced model tested the main effects after controlling for pupil control ideology. With the pupil control variable removed, significance was found for teacher locus of control beliefs, in addition to highest degree earned. Teachers of the Year are significantly more internal in their locus of control beliefs ($p < .01$) than are the inservice teachers, but the predictive strength of locus of control beliefs is less than that of humanistic pupil control orientation. Table 4 shows the second reduced model.

TABLE 4
LOGISTIC REGRESSION SUMMARY
REDUCED MODEL 2

Variable	Beta	Std Err	Chi-Square	p
Intercept	-2.89	1.47	3.83	.05
Teacher Efficacy	.02	.02	1.46	.22
Teacher Locus of Control	.08	.03	6.44	.01**
Teacher Stress	-.004	.01	.19	.66
Gender	.19	.37	.25	.61
Years Teaching Experience	.02	.02	.76	.38
Highest Degree Earned	1.15	.40	8.26	.004**
Junior High School	.23	.53	.19	.66
Senior High School	.52	.42	1.51	.21

* $p < .05$ ** $p < .01$

A third reduced model was tested next, in order to control for the effects of both pupil control and locus of control beliefs. Significance was now found for teacher efficacy beliefs and highest degree earned. The Teachers of the Year have significantly higher efficacy beliefs ($p < .02$) than do inservice teachers, after controlling for the effects of pupil control and locus of control beliefs, in addition to earning significantly higher level degrees. Although efficacy beliefs are significant predictors of teacher effectiveness, this study found them to have less predictive strength than either humanistic pupil control

orientation or locus of control beliefs. Table 5 presents the data for the third reduced model.

TABLE 5
LOGISTIC REGRESSION SUMMARY
REDUCED MODEL 3

Variable	Beta	Std Err	Chi-Square	p
Intercept	-1.71	1.37	1.55	.21
Teacher Efficacy	.04	.01	5.32	.02*
Teacher Stress	-.008	.01	.56	.45
Gender	.10	.36	.08	.77
Years Teaching Experience	.03	.02	1.94	.16
Highest Degree Earned	1.16	.39	8.52	.003**
Junior High School	.05	.51	.01	.91
Senior High School	.14	.39	.14	.71

* $p < .05$ ** $p < .01$

A final reduced model was constructed to control for all teacher belief instruments except teacher stress levels. Now significance remains only for the demographic variable of highest degree earned. Results indicate that there is no significant difference in job-related stress between the Teachers of the Year and inservice teachers, even after the effects of all other teacher belief instruments have been removed. Job-related stress is not a good predictor of teacher effectiveness. The data for the final reduced model are presented in Table 6.

TABLE 6
LOGISTIC REGRESSION SUMMARY
REDUCED MODEL 4

Variable	Beta	Std Err	Chi-Square	p
Intercept	-.01	1.13	.00	.98
Teacher Stress	-.01	.01	2.77	.09
Gender	.19	.35	.29	.59
Years Teaching Experience	.03	.02	1.78	.18
Highest Degree Earned	1.17	.39	9.10	.002**
Junior High School	-.21	.48	.19	.66
Senior High School	-.10	.37	.07	.78

* p < .05 ** p < .01

Correlations of Teacher Belief Instruments

As reported above, logistic multiple regression analysis revealed the presence of multicollinearity, or interrelatedness, between the four teacher belief constructs and, therefore, a lack of significant effects in the full model test. A correlation matrix of the four belief instruments (teacher efficacy, teacher locus of control, pupil control ideology, and teacher stress), including the separate factors for the teacher efficacy and locus of control constructs, was constructed to examine the independence among these variables and to shed further light on the relationships revealed by the logistic regression procedure. Table 7 presents a matrix of the Pearson product moment correlation coefficients for the belief instruments.

TABLE 7
PEARSON PRODUCT MOMENT CORRELATION COEFFICIENTS
FOR TEACHER BELIEF INSTRUMENTS

	TES	TE	PE	TLC	I+	I-	PCI	WSPT
TES	1.00							
TE	.77	1.00						
PE	.83	.29	1.00					
TLC	.47	.29	.45	1.00				
I+	.49	.25	.52	.89	1.00			
I-	.31	.25	.25	.86	.52	1.00		
PCI	-.42	-.44	-.25	-.42	-.36	-.38	1.00	
WSPT	-.33	-.34	-.20	-.22	-.19	-.18	.20	1.00

Note: Correlation matrix symbols are interpreted as follows:

TES = Teacher Efficacy Scale
 TE = Teacher efficacy (a TES factor)
 PE = Personal Efficacy (a TES factor)
 TLC = Teacher Locus of Control Scale
 I+ = Student Success (a TLC factor)
 I- = Student Failure (a TLC factor)
 PCI = Pupil Control Ideology Form
 WSPT = Wilson Stress Profile for Teachers

[Minus (-) signs indicate humanistic orientation for the Pupil Control Ideology Form and lower stress for the Wilson Stress Profile for Teachers. Higher scores indicate higher efficacy for the Teacher Efficacy Scale and more internal locus of control for the Teacher Locus of Control Scale.]

First, Pearson correlations indicate that although the four teacher belief systems are independent constructs, they share considerable variance. For example, there is a significant positive relationship ($r = .47$) between teacher efficacy and teacher locus of control.

Next, it should be noted that scores on the Teacher Efficacy Scale are often reported in terms of Teacher Efficacy and Personal Efficacy factors (Gibson & Dembo, 1984), and on the Teacher Locus of Control Scale in terms of the student success (I+) and student failure (I-) factors (Rose & Medway, 1981a). However, in this study the total scores were used for these two instruments, because when the factor scores were analyzed separately by logistic regression, they were not found to function independently of one another. As a result, the total, or composite, scores were used in the logistic regression procedure for both the TES and the TLC analyses reported earlier.

Also included in Table 7, in the presentation of Pearson product moment correlation coefficients for the teacher belief instruments, are the separate factors for the Teacher Efficacy Scale (TE, PE) and the Teacher Locus of Control Scale (I+, I-).

Cohen (1977) has presented a convention for interpreting the significance of product moment correlation coefficients (\underline{r}), using the following definitions of effect size: small ($\underline{r} = .10$), medium ($\underline{r} = .30$), large ($\underline{r} = .50$). Note that the subscales have very strong correlations with the composite (.77, .83, .89, .86, for TE, PE, I+, and I-, respectively) and strong or moderate correlations with each other (.52 for TLC factors, .29 for TES factors). According to Cohen, a high correlation ($\underline{r} = .52$) is indicated between the Teacher Locus of Control Scale factors (student success and student failure). And, although the moderate Pearson

correlation for the Teacher Efficacy Scale factors (personal efficacy and teacher efficacy) ($r = .29$) would appear to indicate some separation of factors, when a Chi-Square corresponding to the model including these factors and the model with these factors dropped out were subtracted, there was not a significant difference. In addition, a "general" efficacy construct appears to be "overriding" the factors (i.e., large correlations of the factors with the composite); breaking up the construct into these separate factors did not make a difference in the present analysis. Authors of the Teacher Efficacy Scale and the Teacher Locus of Control Scale provide for a total, or composite score, as well as the independent factor scores used in this study.

Pearson correlation coefficients indicate the strongest relationship among the teacher belief instruments to be between the Teacher Efficacy scale and the Teacher Locus of Control Scale ($r = .47$), a moderate to high effect, although the relationship between the Pupil Control Ideology and both the TES and the TLC is the same ($r = -.42$), a moderate effect. The minus (-) indicates that the TES and TLC are related to the humanistic pole of the pupil control ideology continuum. Correlations between the Wilson Stress Profile for Teachers and the other three belief instruments are the lowest, with the TLC ($r = -.22$) and PCI ($r = .20$) both revealing small effects, and the TES ($r = -.33$) showing a moderate effect size. Stress shares the least variance with the other teacher belief constructs, and consequently does not shift in significance across the series of reduced

models. Although all of the teacher belief constructs are interrelated, as the literature suggests, the moderate effect sizes indicate that they are each independent enough to be assessing different belief constructs, but related enough to create multicollinearity problems.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to examine whether effective teachers, represented by Teachers of the Year, differed from regular classroom teachers in terms of four teacher belief systems related to teacher effectiveness: (a) teacher efficacy, (b) teacher locus of control, (c) pupil control orientation, and (d) teacher stress, and whether these beliefs interacted with teachers' gender, years of teaching experience, grade level taught, or highest degree earned.

The following five questions were asked:

1. Do the Teachers of the Year have a higher sense of efficacy than inservice teachers as measured by the Teacher Efficacy Scale?

2. Are the Teachers of the Year more internal in their locus of control than inservice teachers as measured by the Teacher Locus of Control Scale?

3. Are Teachers of the Year more humanistic in their attitudes, relationships, and interactions with their students than inservice teachers as measured by the Pupil Control Ideology Form?

4. Do Teachers of the Year believe they experience lower levels of stress on the job than do inservice teachers as reflected by scores on the Wilson Stress Profile for Teachers?

5. Do Teachers of the Year and inservice teachers differ on their sense of efficacy, locus of control, pupil control ideology, or perceived stress as a result of gender, years of teaching experience, grade level taught, or highest degree earned?

A sample of Teachers of the Year ($n = 88$) from 1987-1990 and a comparison sample of inservice teachers ($n = 92$) completed a composite teacher belief questionnaire consisting of four teacher belief instruments: the Teacher Efficacy Scale (TES), the Teacher Locus of Control Scale (TLC), the Pupil Control Ideology Form (PCI), and the Wilson Stress Profile for Teachers (WSPT). The teachers also completed a demographic information sheet regarding their gender, years of teaching experience, grade level and subject taught, and highest degree earned.

The combined samples ($n = 180$) responded from all 52 states and territories, were two-thirds female, and represented all levels (elementary, junior high or middle, and senior high) and types of schools, including urban, suburban, and inner city, with enrollments ranging from 21 to 2,425. They taught all elementary grades (preschool - 6th), as well as 12 secondary level subject areas, and special education. The two samples were closely matched by gender, grade levels taught, types and sizes of schools, and

states, and were generalizable to 1989 national public school faculty statistics.

A general linear model was constructed to test differences between Teacher of the Year (TOY) and comparison inservice teacher (IT) samples on eight variables: teacher efficacy, teacher locus of control, pupil control ideology, teacher stress, gender, years of teaching experience, grade level taught, and highest degree earned, using a logistic multiple regression procedure. The results of the reduced model, a model with all interactions and a quadratic test removed due to nonsignificance, revealed that Teachers of the Year are significantly more humanistic in their pupil control beliefs, and that Teachers of the Year hold significantly more master's level or higher degrees, in comparison to the inservice teachers.

Because of collinearity among the four teacher belief systems, reduced forms of the regression model were examined. The second reduced model removed pupil control beliefs. With this effect removed, TOYs were found to be significantly more internal in locus of control beliefs than were inservice teachers. A third reduced model, with both pupil control and locus of control beliefs removed, found that Teachers of the Year had significantly higher efficacy beliefs than did inservice teachers. Finally, a fourth reduced model, removing all belief systems except teacher stress beliefs, failed to find any significant difference between Teachers of the Year and inservice teachers regarding job-related stress.

Defining Teacher Effectiveness

Teacher effectiveness has traditionally been measured in terms of "the ability of a classroom teacher to produce higher-than-predicted gains on standardized achievement tests" (Good, 1979, p. 53). Though mean residual gains have also been computed from other pretest-posttest score differences, such as math or reading gains (Brophy, 1973; Good & Grouws, 1977), the focus of measures of teacher effectiveness by process-product researchers has continued to be on student outcome differences.

Researchers have cited problems with a number of the properties of teacher effectiveness as operationalized by process-product research.

1. Effectiveness assumes commonality of curriculum goals, objectives, and content coverage across classrooms because one standardized achievement test is used to judge the effectiveness in all classrooms.
2. Effectiveness is strictly summative in its measurement of subject matter knowledge. It is not what students know or don't know that matters, but the accumulated quantity of their knowledge in comparison with students in other classrooms.
3. Performance on the effectiveness measure is equated with knowledge or skill in subject matter. There is no notion of "less than best effort," guessing, partial knowledge, or test-taking skill.
4. Effectiveness is strictly aggregative across students within a classroom. Operationally, regardless of how student performance is distributed within to classroom, the class average is chosen to represent class performance.

(Shavelson, Webb, & Burstein, 1986, p. 52)

Researchers have also questioned the reliability of sample observations typically used by process-product approaches as representative of total classroom behavior (Rosenshine & Furst, 1973). This approach fails to consider

differences in consistency which may occur with an individual teacher over time.

Finally, some researchers fear that the technological orientation of process-product research leads to "prescriptive standards of practice," and "undue emphasis on achievement gain," and that it "renders teaching merely technical rather than deliberative" (Shulman, 1986, p. 29).

More recently researchers have emphasized the cognitive aspect of the teaching process. This approach has moved the focus of the operationalization of teacher effectiveness from teacher behavior to teacher thought and decision-making (Clark & Peterson, 1986; Shavelson, 1973). These researchers hold that "a teacher's cognitive and other behaviors are guided by and make sense in relation to a personally held system of beliefs. . . ." (Clark & Peterson, 1986, p. 287).

Like recent cognitive approaches, this study emphasizes teacher belief systems, however, unlike previous studies, it defines teacher effectiveness in terms of selection as Teacher of the Year. The present approach is, likewise, not without flaws. As previously discussed, unbiased selection of Teachers of the Year cannot be guaranteed. No form of monitoring is known to occur at the state selection level at this time. In addition to this drawback is the fact that the TOY population is not likely to include all effective teachers. Still, in defense of Shulman's (1986) warning about "the danger for any field of social science or educational research which lies in its potential corruption

by a single paradigmatic view" (p. 4), this approach does offer another view of teacher effectiveness research.

Conclusions

The results of this analysis support earlier studies of these teacher belief constructs and demographic variables in terms of three findings:

1. In this study three of the four teacher belief constructs, pupil control ideology, locus of control, and teacher efficacy seemed to be possible predictors of teacher effectiveness.

2. One of the four demographic variables, highest degree earned, was related to teacher effectiveness.

3. Considerable interrelatedness occurred among all four teacher belief constructs.

The results of this study diverge from earlier studies in terms of three findings:

1. Whereas earlier studies have indicated that teacher efficacy and teacher locus of control are strong predictors of teacher effectiveness, these results indicate that pupil control ideology is stronger than either teacher efficacy or teacher locus of control in its ability to predict the most effective teachers.

2. In this study teacher stress was not related to teacher effectiveness.

3. Teacher gender, experience, and grade level did not interact with the four teacher belief systems in predicting the most effective teachers.

Significance of Pupil Control Beliefs

The results of this study determined that the teacher's pupil control ideology beliefs are more closely related to achieving the status of Teacher of the Year than the teacher's locus of control, efficacy, or stress beliefs. This finding proposes a new direction of inquiry for teacher effectiveness research, the most recent of which has focused on teacher efficacy and locus of control as the major predictors. For example, researchers have claimed that in relationship to teacher behavior and student achievement, the teacher's sense of efficacy is the "single most powerful explanatory variable" (Berman et al., 1977, p. 73), and that high efficacy teachers are "more likely than their low-efficacy counterparts to define low-achieving students as reachable, teachable, and worthy of teacher attention and effort" (Ashton & Webb, 1986, p. 72).

The last two decades have also seen extensive research establish the relationship of student, as well as teacher, locus of control to student achievement. The findings of this study reveal that when humanistic versus custodial pupil control are examined in relation to the teacher belief systems of efficacy, locus of control, and job-related stress, the latter may have less predictive power. In part, this may be due to the differences in how effectiveness was defined. Whereas prior studies chose to operationalize effectiveness as student outcomes, in this study effectiveness was defined in terms of selection as Teacher of the Year.

What this means is that teachers chosen as Teachers of the Year hold humanistic beliefs about the way in which teachers relate to their students on the pupil control dimension. Specific teacher beliefs being measured by the PCI, according to its authors, are trust, acceptance, friendship, respect, self-discipline, democratic climate, flexibility, student self-determination, and nonpunitive, nonmoralistic attitudes. It would be overgeneralizing from the data to construe those beliefs more broadly to include such things as open classroom and other humanistic concepts of the '60s and '70s. Rather, they define a teacher belief system whose fundamental orientation is caring in the classroom. It may be that a strong sense of caring for students is reflected in certain teacher behaviors which are recognized by students. It may be that students respond to trust, friendship, and respect, brought about by the initial caring beliefs of the teacher, with achievement and self-discipline. It may also be the case that those who nominate and choose Teachers of the Year are responding to the caring attitudes and behaviors that result from such teacher beliefs.

The findings of this study regarding the humanistic student control orientation may have implications for both teacher education and teacher evaluation. This research suggests that humanistic pupil control beliefs should be emphasized as strongly, if not more strongly, than teacher efficacy and locus of control. However, it is likely that today's colleges of education are not making enough effort

to address the concerns of any of the beliefs of teacher education majors. At present, teacher education programs may not be emphasizing the need to assess, clarify, or change the beliefs of students in teacher education courses. Although current teacher education programs do present some knowledge of the effects of teacher beliefs in courses, they may not be doing enough to model or directly impact the belief systems of preservice and inservice teachers.

Teacher education majors should have knowledge of the importance of and an opportunity to be exposed to those teacher beliefs which make a difference in teacher effectiveness. This knowledge should be presented in the education core curriculum and emphasized throughout the teacher training period. In addition, teacher educators could become models of teacher beliefs that lead to student learning in their own classes.

Additional research may be needed to help develop teacher education curriculum designed to enhance the awareness and development of more humanistic pupil control ideology beliefs among future teachers. For example, procedures could be developed for allowing teacher education majors to: (a) examine their own belief systems, (b) have opportunities to compare their beliefs or psychological theories with those in the literature, and (c) examine actual teaching experiences (e.g., teacher case studies) in light of their own teacher beliefs systems.

Darling-Hammond, Wise, and Pease (1983) have stated that as research continues to reveal the complexity of the

teaching/learning process, recognition of the need for a more well-defined teacher evaluation system has become a primary concern. The humanistic pupil control ideology offers a new dimension to the present structure of teacher evaluation systems.

Teacher observation instruments could be developed to assess the caring, trusting behaviors reflected by humanistic pupil control ideology beliefs. Teacher certification exams could assess knowledge of the types of teacher beliefs measured by the PCI. Criteria for such measures should be included in teacher evaluation instruments. The addition of criteria for teacher evaluation and selection which includes a measure of teacher beliefs regarding humanistic pupil control could be developed and evaluated.

Significance of Highest Degree Earned

Results of this study did not support any of the 13 research reports reviewed, which found the factors of gender, years of teaching experience, or grade levels taught to have interactions with the four teacher belief systems studied. Although there was no interaction between highest degree earned and any belief system, highest degree earned significantly differentiated TOYs from ITs. A significantly greater number of the Teachers of the Year held master's or higher degrees than their regular classroom counterparts.

A number of factors may account for this finding. Although, the extent to which the number of higher degrees

may be traced to the process utilized for selecting Teachers of the Year is not known, teacher preparation is listed among the criteria for TOY selection. It is, therefore, possible that the TOY selection process itself is responsible for the significantly higher number of master's or higher degrees found among the Teachers of the Year.

Another possible factor may be that effective teachers, given that they are significantly higher in their beliefs related to humanistic pupil control, internal locus of control, and sense of efficacy for teaching than other teachers, might be expected to be more dedicated and committed to effective teaching. Wiedmer (1983) reported that a majority of the Teachers of the Year that he studied stated that their reasons for remaining in the teaching profession were enjoyment of and commitment to teaching. Commitment would be likely to motivate the professional to seek all the knowledge and support possible to improve functional capabilities in the chosen field of endeavor, including additional work in teacher education.

Finally, there is the possibility that graduate work in teacher education does make a difference in the teacher's ability to perform more effectively in the classroom, and that teacher training institutions make a significant contribution to teacher effectiveness. In any case, the significance of this finding indicates the need for future teacher effectiveness research to control for teacher degree levels.

Interrelatedness of Teacher Belief Constructs

Twenty-one different studies reviewed for this research reported shared variance between two or more of the four teacher belief constructs. This interrelatedness, found consistently throughout the literature, is clearly supported by the present analysis. The interrelationships of the four belief constructs in this study varied from high moderate ($r = .47$) to moderately low ($r = .20$), but in no case were they so highly interrelated as to lose their ability to function as independent constructs.

According to Cohen (1977), correlation effect size may be interpreted as follows: small ($r = .10$), moderate ($r = .30$), large ($r = .50$). The most strongly interrelated constructs in the present study were teacher efficacy and teacher locus of control total scores ($r = .47$). A moderate negative effect of ($r = -.42$) was found to exist between pupil control ideology and both teacher efficacy and locus of control. (The negative sign indicates the humanistic, as opposed to custodial, pole of the pupil control continuum.) The relationship between teacher stress and teacher efficacy was a moderate effect ($r = -.33$). Lowest were the relationships between teacher stress and teacher locus of control ($r = -.22$) and between teacher stress and pupil control ideology ($r = .20$). Teacher stress shared the least variance with the other teacher belief constructs and also continued to show no significance as a predictor of teacher effectiveness across the series of reduced models.

These results support the findings of Ashton, Webb, and Doda (1983), who reported a significant correlation ($p < .05$) between the TES factor, Personal Efficacy, and both the student success (I+) and student failure (I-) factors of the TLC. These results also support Parkay, Greenwood, Olejnik, and Proller (1988), who found significant correlations ($p < .05$) between teacher stress, teacher locus of control, and teacher efficacy. Although these researchers used the Rand Corporation items to test teacher efficacy, they used the same teacher locus of control and teacher stress instruments that were used in the present study, the TLC and the WSPT.

The findings of this study also support the interrelatedness found between the teacher belief constructs reported by the following studies: teacher efficacy and pupil control ($p < .01$) (Barfield & Burlingame, 1974), teacher efficacy and teacher stress ($r = -.43$) (Brissie, Hoover-Dempsey, & Bassler, 1988), teacher locus of control and pupil control ($r = .2025$, $p < .05$) (Sadowski & Woodward, 1983), teacher locus of control and teacher stress ($r = .27$, $.24$, $.23$, $p < .01$) (Halpin, Harris, & Halpin, 1985), and pupil control and teacher stress ($r = .39$, $p < .001$) (Albertson & Kagan, 1987).

Finally, the results of this study suggest that although the teacher locus of control and teacher efficacy instruments total scores are strongly related ($r = .47$), they reveal enough separation to be recognized as separate constructs, each of which may be a significant predictor of

teacher effectiveness after pupil control effects are removed. Bandura (1977a) not only distinguishes between these two constructs, defining locus of control as "a person's estimate that a given behavior will lead to certain outcomes" and efficacy as "the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 193), but also emphasizes the importance of considering the effects of both efficacy and locus of control when predicting any human behavior. "In any given instance behavior would be best predicted by considering both self-efficacy and outcome beliefs" (Bandura, 1982, p. 140). Since the results of this study found teacher efficacy and teacher locus of control to be separate constructs, and also found each construct to be significant, after pupil control effects are removed, the present results lend support to Bandura's distinctions about these beliefs for predicting behaviors, as they relate to classroom interaction and teacher effectiveness.

One final limitation is the use of cross-sectional data. The direction of the effects of this type of data cannot be determined. Although it is assumed that teacher beliefs will affect the selection of teachers as Teacher of the Year, it may be that teachers' beliefs were instead effected by this selection. That is, after selection as Teacher of the Year, teachers may take more humanistic approaches toward their students as a result of a shift in their perceptions of their own effectiveness.

Recommendations

At least nine lines of investigation of teacher belief systems as they relate to teacher effectiveness seem fruitful. These form the basis for the nine future research questions that follow:

1. What follow-up studies should be conducted to further examine the relationships between teacher stress and the factor scores of teacher efficacy and locus of control constructs and other belief systems?

Although stress did not discriminate between TOYs and ITs, and the factor scores generally reported for the TES and TLC instruments did not prove to be significant for this study after controlling for background variables, subtle differences resulting from these variables might be detected if the data are further analyzed in other ways. The following studies suggest ways in which possible distinctions emerging from these variables might be revealed:

- a. Other researchers have found significant differences among teachers' locus of control beliefs regarding student success and student failure, such that four locus of control belief patterns may be hypothesized to occur among teachers. In order to investigate differences that might be present between these teacher locus of control factors, divide TOY and IT samples into the following belief system combinations:

(a) high I+ and high I- (b) low I+ and low I-

(c) high I+ and low I- (d) low I+ and high I-

Analyze differences between TOYs ($\underline{n} = 88$) and ITs ($\underline{n} = 92$) on these four patterns of factor scores in relation to teacher stress and pupil control, controlling for differences in highest degrees earned. Also analyze the pooled samples of teachers ($\underline{N} = 180$) on these same factor scores in relation to teacher stress and pupil control ideology beliefs, controlling for highest degree earned.

- b. Research on the TES has established the two independent factors of personal efficacy and teacher efficacy. Again, it is possible to establish four belief patterns using the two factor scores in high and low group combinations:

(a) high PE and high TE (b) low PE and low TE

(c) high PE and low TE (d) low PE and high TE

Analyze differences between TOY and IT scores on these factor patterns related to teacher stress and pupil control ideology beliefs, controlling for highest degree earned. Also analyze any differences in these four factor score combinations related to teacher stress and pupil control ideology beliefs, for the pooled sample of teachers.

- c. Other researchers have found teacher stress beliefs to be related to age or experience differences. Analyze teacher stress results in relation to teachers years of experience. Compare scores of teachers of five groups (0-4 yrs., 5-9 yrs., 10-14 yrs., 15-19 yrs., and 20+ yrs.) of teaching experience with their corresponding scores on teacher stress beliefs. Analyze differences in TOY and IT samples, and the combined group of teachers, controlling for highest degree earned.
- d. Because "hardiness" has been found by other studies to play a critical role in mediating stress (Holt, Fine & Tollefson, 1987; Martinez, 1989), high and low hardiness should be studied in relation to teacher stress, teacher efficacy, teacher locus of control, and pupil control ideology, controlling for highest degree earned.

2. What implications does the present research have for future TOY selection procedures? The limitations of this study include the concern that a structured monitoring system by state for TOY selection is not clearly delineated at the present time. It may be fruitful, therefore, to address future research and evaluation to this concern.

- a. Analyze the need for and ability to obtain a trained monitor whose purpose is to oversee future state selection procedures for TOYs to determine whether, and to what degree, teachers

may be inadvertently selected out for teaching effectiveness based on their level of education, or based on the degree of humanistic qualities observable in their interaction with their students or in their personalities. Future analysis might begin by

- (a) comparing and evaluating the TOY selection process in different states chosen randomly from around the country to determine whether, and which types of, inconsistencies in TOY selection may be occurring, and
- (b) developing monitoring procedures to systematically control for bias in TOY selection.

- b. Conduct a study using the same variables as the present study with a sample from another population of presumed effective teachers, such as (a) the Outstanding Young Teacher of the Year sponsored by the Junior Chamber of Commerce, (b) teachers judged best on the basis of a merit pay system, or (c) teachers judged best by curriculum supervisors, principals, or superintendents. Compare these samples for similarities or differences in belief systems, controlling for highest degree earned.

3. How do teacher beliefs systems, such as teacher efficacy, teacher locus of control, and humanistic pupil

control orientation, become incorporated into the teacher's thinking or decision-making process?

- a. Develop a structured question protocol (see Yin, 1984) for a qualitative research project whose purpose is to determine how teachers develop specific belief systems. Analyze results to determine whether major categories will emerge. If individual categories are revealed, further analyze through extended teacher interviews, that is, continue to build on the existing category data bank of teacher belief system categories until such time as changes and additions cease to occur. This data may then be used to
 - (a) enhance curriculum on teacher belief systems, teacher thinking and decision-making, or reflective teaching in education classes;
 - (b) help determine new directions for improved definition of teacher evaluation systems; and
 - (c) construct an improved teacher belief system questionnaire.
- b. Administer the Teacher Belief Questionnaire
 - (a) to preservice teachers during their earliest semester and again in their final semester to determine whether, and to what extent, belief systems may develop during teacher training;
 - (b) to education majors prior to and following the student teaching term to determine whether, and to what extent, belief systems

- may develop from teaching experience; and
- (c) to education graduates after the first full year of teaching and again after the fifth full year.

Analyze data to determine if and when differences in teacher belief systems occur.

4. Can teachers develop specific teacher belief systems through study and training?

- a. Design a comprehensive curriculum for the study and development of teacher beliefs, especially humanistic pupil control orientation, high teaching efficacy, internal teacher locus of control, and healthy levels of teacher stress, in teacher education programs. Compare preservice teachers who have completed the teacher belief curriculum study with those who have not been exposed to the teacher belief curriculum on
 - (a) micro teaching ability;
 - (b) success of practice teaching experience (FPMS);
 - (c) Teacher Belief Questionnaire scores;
 - (d) curriculum design assignments; and
 - (e) classroom management skills assignments.
- b. Conduct a longitudinal study of three samples of teachers:
 - (a) those trained in teacher belief systems,
 - (b) those who score high in belief systems, and

(c) a control group of teachers who have been selected at random.

C. Compare these samples of teachers for differences in teaching behavior and general success in teaching as measured by existing teacher education program practice teaching criteria, such as the FPMS in Florida.

5. How might belief systems differ among other special populations of teachers? Teachers' beliefs regarding efficacy, locus of control, pupil control orientation, or stress may differ, depending on the particular teaching/learning environment in which the teacher must function. Some classroom environments may include types of student behavior which require different teacher reaction and decision-making behavior in order to promote effective learning, and therefore may be expected to generate teacher beliefs which vary from those of teachers in typical classroom settings.

- a. Conduct a study using the same variables as the present study with samples of teachers functioning in the most difficult teaching/learning situations, such as teachers of children from inner city ghettos, migrant workers, hispanic minorities, black minorities, or crack-addicted children. Compare these scores with those of the TOYs and the ITs. .
- b. Conduct a study using the same variables as the present study with samples of teachers

functioning in special education settings, such as gifted, learning disabled, physically or emotionally handicapped, or other exceptional student group settings. Compare these scores with those of the TOYs and the ITs.

6. How might student belief systems affect, or relate to, teacher belief systems and the A-B-C-D link model?

In future studies researchers might consider a fifth link in the A-B-C-D link model, student belief. Whereas this model considers teacher belief and teacher behavior, it considers only behavior for students, omitting student belief systems. It may be that student beliefs concerning pupil control, student efficacy, student locus of control, student stress, or other belief systems that affect the teaching/learning process will also affect the outcome of teacher effectiveness research. The existence of differences in efficacy, locus of control, and stress levels among children, and the relationship of these factors to achievement, is well known in the literature.

In their mediational model of the relationship between teachers' sense of efficacy and student achievement, Ashton and Webb (1986) included students' sense of efficacy as an additional link. They stated that students' sense of efficacy is a "crucial element in the model" (p. 146). They further state that the findings of Cooper and Good (1983) support this five link model. According to Ashton and Webb, if progress is to be made towards the goal of ecological reform, making schools into places where teaching and

learning reaches full potential, "the promotion of a high sense of efficacy in teachers and students must become an educational aim as important as academic achievement"

(p. 176). Perhaps researchers should consider the A-B-C-D-E link model, that is, teacher belief, teacher behavior, student belief, student behavior, and student achievement.

- a. Construct a Student Belief Questionnaire (SBQ) based on the Teacher Belief Questionnaire (TBQ). For example, student questions might read:

1. "When I get better grades than usual, it is more likely (a) because my teacher found better ways to teach me (b) because I tried harder to do well."
2. "I could learn more at school if everybody at home thought school was important."
3. "I get upset at school when everybody talks loudly . . . when the principal comes into the classroom . . . when the teacher yells."
4. "I like it when my teacher lets me figure out things by myself."
5. "School is easiest when the teacher is your boss . . . friend."

- b. Identify teachers and students who are high and low on specific belief systems. Compare samples of (a) teachers identified as high on specific belief systems, (b) teachers identified as low on specific belief systems, (c) students identified as high on specific belief systems, (d) students

identified as low on specific belief systems. Determine whether, and to what degree, differences in teacher or student behavior or interaction occur as a result of the student belief variable.

- c. Measure teacher beliefs (TBQ) and measure student beliefs (SBQ). Compare to determine whether any relationship exists between teacher and student belief scores.

7. Do students learn and incorporate into their own beliefs systems those belief systems modeled by their teachers?

- a. Administer belief questionnaires to both teachers and students at the beginning and end of the school year.
- b. Compare data to determine whether students' beliefs change to match more closely the beliefs of their teachers.

8. How might teacher belief systems be incorporated into reflective teaching practices?

Recent teacher training literature has focused on the value of reflection in teaching for personal and professional growth and increased problem solving ability in the classroom (Sparks-Langer & Colton, 1991; Sagor, 1991). Since teachers can monitor through reflection the level of their own beliefs as teachers, whether relating to pupil control ideology, teacher efficacy, teacher locus of control, teacher stress, or other teacher belief systems,

this research may be important for the reflective teacher, who is committed to becoming more effective through self-initiated inquiry, keeping a teaching journal, and learning from her/his own classroom attitudes and behaviors.

- a. Generate a list of questions related to teacher beliefs, such as teacher efficacy, locus of control, pupil control ideology, or job-related stress, to be integrated with other questions, upon which teachers or education majors may reflect in teaching journals. Compare samples of teachers or education majors who used teacher belief questions for reflection and those who did not for differences in teaching behavior or effectiveness.

- b. Incorporate teacher belief questions into existing questions found in reflective teaching programs in teacher education courses.

Administer the TBQ before and after student exposure to reflective teaching coursework.

Analyze data for change score differences.

9. Are there differences between teachers defined as effective by student outcome measures and those whose effectiveness is measured in terms of properties of the teacher?

Because other investigators have defined teacher effectiveness in terms of student achievement and this researcher defined teacher effectiveness as properties of the teacher, it may be useful to look for differences which

may be occurring between samples of teachers selected as effective by student outcome measures and those selected as a result of teacher belief scores.

- a. Collect data on both student outcome measures (such as standardized achievement test scores), as well as teacher belief systems on a large sample of teachers, controlling for gender, years of experience, grade level taught, and highest degree earned.
- b. Compare data to determine whether teachers who rank highest in effectiveness defined by student outcome measures also rank highest in effectiveness as defined by teacher belief systems. Determine what differences, if any, are occurring.

APPENDIX A
LETTERS TO TEACHERS

October 1, 1990

Dear Teacher of the Year,

I am a doctoral candidate at the University of Florida conducting research into the issue of teachers' beliefs. My concern is that, as education reform moves forward, the voice of the classroom teacher must be heard and understood.

This packet contains questions that may help researchers to realize what teachers believe about aspects of the teaching/learning process. You are a member of an elite group of the nation's most effective teachers. As such, your response is critical.

As a former Teacher of the Year, I am as intensely aware of the value of your time, as I am the value of your voice in any future education reforms. I am, therefore, hopeful that you will consider this additional brief task among the many that you perform daily.

In return for your help, I offer my gratitude, my pledge of continued support for the improved understanding of the impact of the professional teacher on the success of the educational system, and a report of the results of this research at your request.

Please complete the enclosed INFORMATION SHEET and questionnaire ANSWER SHEET and return them by October 10, in the enclosed stamped, addressed envelope.

Be assured that this information will be used solely for the purposes of this research, that the data will be recorded by the number appearing on your information and answer sheet, and that your name will never be used anywhere in this research. You will remain anonymous! If you have any questions regarding this research, please feel free to contact me directly at any time.

Thank you for your participation!

October 1, 1990

Dear teacher,

I am a doctoral candidate at the University of Florida conducting research into the issue of teachers' beliefs. My concern is that, as education reform moves forward, the voice of the classroom teacher must be heard and understood.

This packet contains questions that may help researchers to realize what teachers believe about aspects of the teaching/learning process. You are a member of a small sample of teachers, who have been randomly selected from around the country, to represent typical teachers. As such, your response is critical.

As a former public school teacher of eighteen years, I am as intensely aware of the value of your time, as I am the value of your voice in any future education reforms. I am, therefore, hopeful that you will consider this additional brief task among the many that you perform daily.

In return for your help, I offer my gratitude, my pledge of continued support for the improved understanding of the impact of the professional teacher on the success of the educational system, and a report of the results of this research at your request.

Please complete the enclosed INFORMATION SHEET and questionnaire ANSWER SHEET and return them by October 10, in the enclosed stamped, addressed envelope.

Be assured that this information will be used solely for the purposes of this research, that the data will be recorded by the number appearing on your information and answer sheet, and that your name will never be used anywhere in this research. You will remain anonymous! If you have any questions regarding this research, please feel free to contact me directly at any time.

Thank you for your participation!

APPENDIX B
LETTER FROM THE DEAN



OFFICE OF THE DEAN
140 Norman Hall
September 25, 1990

University of Florida
Gainesville, FL 32611-2053
Fax # (904) 392-7159

Ms. Karen J. Agne
Foundations of Education
1403 Norman Hall
University of Florida
Gainesville, Florida 32611

Dear Ms. Agne:

I am pleased to learn that you have selected for your doctoral dissertation a study of the role of teacher beliefs in teacher effectiveness. The need for better understanding of the nature of teacher effectiveness continues to be of urgent concern to the educational community and the general public.

I endorse your study; it has the potential for providing new and useful information related to teacher effectiveness.

Sincerely,

A handwritten signature in cursive script that reads 'Marvin R. McMillin'.

Marvin R. McMillin
Associate Dean

MRM:tsf

APPENDIX C

The purpose of this questionnaire is to discover what teachers truly believe about some facets of their profession. Therefore, your frank and honest opinion is critical to the success of the findings. There are no right or wrong answers! All responses gathered in this research will remain completely confidential! Only response frequencies will be reported.

You will find statements and questions about the teaching environment presented on the following pages. Instructions for answering some sections will vary. You must answer all questions for your answer sheet to be usable in this research. Thank you for your participation!

----- Part 1

Please indicate the degree to which you agree or disagree with each statement below by choosing the appropriate number and marking the corresponding place on the answer sheet provided.

	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
1. When a student does better than usual, many times it is because I exerted a little extra effort.	1	2	3	4	5	6
2. The hours in my class have little influence on students compared to the influence of their home environment.	1	2	3	4	5	6
3. If parents comment to me that their child behaves much better at school than he/she does at home, it would probably be because I have some specific techniques of managing his/her behavior which they may lack.	1	2	3	4	5	6
4. The amount that a student can learn is primarily related to family background.	1	2	3	4	5	6
5. If a teacher has adequate skills and motivation, she/he can get through to the most difficult students.	1	2	3	4	5	6
6. If students aren't disciplined at home, they aren't likely to accept any discipline.	1	2	3	4	5	6
7. I have enough training to deal with almost any learning problem.	1	2	3	4	5	6
8. My teacher training program and/or experience has given me the necessary skills to be an effective teacher.	1	2	3	4	5	6
9. Many teachers are stymied in their attempts to help students by lack of support from the community.	1	2	3	4	5	6
10. Some students need to be placed in slower groups so they are not subjected to unrealistic expectations.	1	2	3	4	5	6

	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
11. Individual differences among teachers account for the wide variations in student achievement.	1	2	3	4	5	6
12. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.	1	2	3	4	5	6
13. If one of my new students cannot remain on task for a particular assignment, there is little that I could do to increase his/her attention until he/she is ready.	1	2	3	4	5	6
14. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student.	1	2	3	4	5	6
15. When I really try, I can get through to most difficult students.	1	2	3	4	5	6
16. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	1	2	3	4	5	6
17. Teachers are not a very powerful influence on student achievement when all factors are considered.	1	2	3	4	5	6
18. If students are particularly disruptive one day, I ask myself what I have been doing differently.	1	2	3	4	5	6
19. When the grades of my students improve it is usually because I found more effective teaching approaches.	1	2	3	4	5	6
20. If my principal suggested that I change some of my class curriculum, I would feel confident that I have the necessary skills to implement the unfamiliar curriculum.	1	2	3	4	5	6
21. If a student masters a new math concept quickly, this might be because I knew the necessary steps in teaching that concept.	1	2	3	4	5	6
22. Parent conferences can help a teacher judge how much to expect from a student by giving the teacher an idea of the parents' values toward education, discipline, etc.	1	2	3	4	5	6
23. If parents would do more with their children, I could do more.	1	2	3	4	5	6

	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
24. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	1	2	3	4	5	6
25. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly.	1	2	3	4	5	6
26. School rules and policies hinder my doing the job I was hired to do.	1	2	3	4	5	6
27. The influences of a student's home experiences can be overcome by good teaching.	1	2	3	4	5	6
28. When a child progresses after being placed in a slower group, it is usually because the teacher has had a chance to give him/her extra attention.	1	2	3	4	5	6
29. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	1	2	3	4	5	6
30. Even a teacher with good teaching abilities may not reach many students.	1	2	3	4	5	6

Part 2

Please indicate the degree to which you agree or disagree with each statement below by choosing the appropriate number and marking the corresponding place on the answer sheet provided.

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
31. It is desirable to require students to sit in assigned seats during assemblies.	1	2	3	4	5
32. Students are usually not capable of solving their problems through logical reasoning.	1	2	3	4	5
33. Directing sarcastic remarks toward a defiant student is a good disciplinary technique.	1	2	3	4	5

	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
34. Beginning teachers are not likely to maintain strict enough control over their students.	1	2	3	4	5
35. Teachers should consider revision of their teaching methods if these are criticized by their students.	1	2	3	4	5
36. The best principals give unquestioning support to teachers in disciplining students.	1	2	3	4	5
37. Students should not be permitted to contradict the statements of a teacher in class.	1	2	3	4	5
38. It is justifiable to have students learn many facts about a subject even if they have no immediate application.	1	2	3	4	5
39. Too much student time is spent on guidance and activities and too little on academic preparation.	1	2	3	4	5
40. Being friendly with students often leads them to become too familiar.	1	2	3	4	5
41. It is more important for students to learn to obey rules than that they make their own decisions.	1	2	3	4	5
42. Student governments are a good "safety valve" but should not have much influence on school policy.	1	2	3	4	5
43. Students can be trusted to work together without supervision.	1	2	3	4	5
44. If a student uses obscene or profane language in school, it must be considered a moral offense.	1	2	3	4	5
45. If students are allowed to use the bathroom without getting permission, this privilege will be abused.	1	2	3	4	5
46. A few students are just young hoodlums and should be treated accordingly.	1	2	3	4	5
47. It is often necessary to remind students that their status in school differs from that of teachers.	1	2	3	4	5
48. A student who destroys school material or property should be severely punished.	1	2	3	4	5
49. Students cannot perceive the difference between democracy and anarchy in the classroom.	1	2	3	4	5
50. Students often misbehave in order to make the teacher look bad.	1	2	3	4	5

Part 3

The following statements regard the areas and frequency of your stress on the job. As you read each item, please evaluate the statement in terms of a period of time rather than a specific day you remember. Indicate how often the source of stress occurs by marking the number on your answer sheet that corresponds to the frequency of occurrence.

	Never	Seldom	Sometimes	Often	Very Often
51. I have difficulty controlling my class.	1	2	3	4	5
52. I become impatient/angry when my students do not do what I ask them to do.	1	2	3	4	5
53. Lack of student motivation to learn affects the progress of my students negatively.	1	2	3	4	5
54. My students make my job stressful.	1	2	3	4	5
55. I have difficulty in my working relationship with my administrator(s).	1	2	3	4	5
56. My administrator makes demands of me that I cannot not meet.	1	2	3	4	5
57. I feel I cannot be myself when I am interacting with my administrator.	1	2	3	4	5
58. I feel my administrator does not approve of the job I do.	1	2	3	4	5
59. I feel isolated in my job (and its problems).	1	2	3	4	5
60. I feel my fellow teachers think I am not doing a good job.	1	2	3	4	5
61. Disagreements with my fellow teachers are a problem for me.	1	2	3	4	5
62. I get too little support from the teachers with whom I work.	1	2	3	4	5
63. Parents of my students are a source of concern for me.	1	2	3	4	5
64. Parent's disinterest in their child's performance at school concerns me.	1	2	3	4	5
65. I feel my students' parents think I am not doing a satisfactory job of teaching their children.	1	2	3	4	5
66. The home environment of my students concerns me.	1	2	3	4	5
67. I have too much to do and not enough time to do it.	1	2	3	4	5

	Never	Seldom	Sometimes	Often	Very Often
68. I have to take work home to complete it.	1	2	3	4	5
69. I am unable to keep up with correcting papers and other school work.	1	2	3	4	5
70. I have difficulty organizing my time in order to complete tasks.	1	2	3	4	5
71. I put self-imposed demands on myself to meet scheduled deadlines.	1	2	3	4	5
72. I think badly of myself for not meeting the demands of my job.	1	2	3	4	5
73. I am unable to express my stress to those who place demands on me.	1	2	3	4	5
74. Teaching is stressful for me.	1	2	3	4	5
75. The frequency I experience one or more of these symptoms is: stomachaches, backaches, elevated blood pressure, stiff necks and shoulders	1	2	3	4	5
76. I find my job tires me out.	1	2	3	4	5
77. I am tense by the end of the day.	1	2	3	4	5
78. I experience headaches.	1	2	3	4	5
79. I find myself complaining to others.	1	2	3	4	5
80. I am frustrated and/or feel angry.	1	2	3	4	5
81. I worry about my job.	1	2	3	4	5
82. I feel depressed about my job.	1	2	3	4	5
83. I am unable to use an effective method to manage my stress (such as exercise, relaxation techniques, etc.).	1	2	3	4	5
84. Stress management techniques would be useful in helping me cope with the demands of my job.	1	2	3	4	5
85. I am now using one or more of the following to relieve my stress: alcohol, drugs, yelling, blaming, withdrawing, eating, smoking	1	2	3	4	5
86. I feel powerless to solve my difficulties.	1	2	3	4	5

Part 4

For the statements that follow, please indicate which conclusion ("a" or "b") agrees most closely with your own personal belief, and mark the corresponding place on your answer sheet.

87. When the grades of your students improve, it is more likely
- because you found ways to motivate the students, or
 - because the students were trying harder to do well.
88. Suppose you had difficulties in setting up learning centers for students in your classroom. Would this probably happen
- because you lacked the appropriate materials, or
 - because you didn't spend enough time in developing activities to go into the center?
89. Suppose your students did not appear to be benefitting from a more individualized method of instruction. The reason for this would probably be
- because you were having some problems managing this type of instruction, or
 - because the students in your class were such that they needed a more traditional kind of approach.
90. When a student gets a better grade on his report card than he usually gets, is it
- because the student was putting more effort into his schoolwork, or
 - because you found better ways of teaching that student?
91. If the students in your class became disruptive and noisy when you left them alone in the room for five minutes, would this happen
- because you didn't leave them interesting work to do while you were gone, or
 - because the students were more noisy that day than they usually are?
92. When some of your students fail a math test, it is more likely
- because they weren't attending to the lesson, or
 - because you didn't use enough examples to illustrate the concept.
93. Suppose you were successful at using learning centers with your class of 30 students. Would this occur
- because you worked hard at it, or
 - because your students easily conformed to the new classroom procedure?
94. When a student pulls his or her grade up from a "C" to a "B," it is more likely
- because you came up with an idea to motivate the student, or
 - because the student was trying harder to do well.
95. Suppose you are teaching a student a particular concept in arithmetic or math and the student has trouble learning it. Would this happen
- because the student wasn't able to understand it, or
 - because you couldn't explain it very well?
96. When a student does better in school than he usually does, is it more likely
- because the student was trying harder, or
 - because you tried hard to encourage the student to do better?

97. If you couldn't keep your class quiet, it would probably be
- a. because the students came to school more rowdy than usual, or
 - b. because you were so frustrated that you weren't able to settle them down.
98. Suppose a play put on by your class was voted the "Best Class Play of the Year" by students and faculty in your school. Would it be
- a. because you put in a lot of time and effort as the director, or
 - b. because the students were cooperative
99. Suppose it were the week before Easter vacation and you were having some trouble keeping order in your classroom. This would more likely happen
- a. because you weren't putting extra effort into keeping the students under control, or
 - b. because the students were more uncontrollable than usual.
100. If one of your students couldn't do a class assignment, would it be
- a. because the student wasn't paying attention during the class lesson, or
 - b. because you gave the student an assignment that wasn't on his or her level?
101. Suppose you wanted to teach a series of lessons on Mexico, but the lessons didn't turn out as well as you had expected. This would more likely happen
- a. because the students weren't that interested in learning about Mexico, or
 - b. because you didn't put enough effort into developing the lessons.
102. Suppose a student who does not typically participate in class begins to volunteer his or her answers. This would more likely happen
- a. because the student finally encountered a topic of interest to him or her, or
 - b. because you tried hard to encourage the student to volunteer his or her answers.
103. Suppose one of your students cannot remain on task for a particular assignment. Would this be more likely to happen
- a. because you gave the student a task that was somewhat less interesting than most tasks, or
 - b. because the student was unable to concentrate on his or her schoolwork that day?
104. Suppose you were unable to devise an instructional system as requested by the principal, which would accommodate the "needs of individual students" in your class. This would most likely happen
- a. because there were too many students in your class, or
 - b. because you didn't have enough knowledge or experience with individualized instructional programs.
105. If the students in your class perform better than they usually do on a test, would this happen
- a. because the students studied a lot for the test, or
 - b. because you did a good job of teaching the subject area?
106. When the performance of a student in your class appears to be slowly deteriorating, it is usually
- a. because you weren't trying hard enough to motivate him or her, or
 - b. because the student was putting less effort into his or her schoolwork.
107. Suppose a new student was assigned to your class, and this student had a difficult time making friends with his or her classmates. Would it be more likely
- a. that most of the other students did not make an effort to be friends with the new student, or
 - b. that you were not trying hard enough to encourage the other students to be more friendly toward the newcomer?

108. If the students in your class performed better on a standardized achievement test given at the end of the year compared to students you had last year, it would probably be
- a. because you put more effort into teaching this, or
 - b. because this year's class of students were somewhat smarter than last year's.
109. Suppose, one day, you find yourself reprimanding one of your students more often than usual. Would this be more likely to happen
- a. because that student was misbehaving more than usual that day, or
 - b. because you were somewhat less tolerant than you usually are?
110. Suppose one of your underachievers does his or her homework better than usual. This would probably happen
- a. because the student tried hard to do the assignment, or
 - b. because you tried hard to explain how to do the assignment.
111. Suppose one of your students began to do better schoolwork than he usually does. Would this happen
- a. because you put much effort into helping the student do better, or
 - b. because the student was trying harder to do well in school?
112. Suppose you ask two students to work together on an activity and the students were able to work together well. Is it more likely
- a. that they were some of your better students, or
 - b. that you gave the students explicit instructions on what to do?
113. If a student who is usually very quiet begins to talk in class, it is more likely
- a. because the student finally found something that interests him or her, or
 - b. because you tried hard to encourage the student to talk in class.
114. If the students in your class remained quiet when you left them alone for a few minutes, this would more likely happen
- a. because you knew how to keep them quiet when you are out of the room, or
 - b. because the students were more controllable than usual.
-

Please double check your answer sheet to ensure that no items have been omitted!

Your responses to this questionnaire will be very valuable to the understanding of teachers' personal feelings and beliefs about their environment and the school system. Thank you again for making time in your demanding schedule to add your perceptions to the total findings.

APPENDIX D
DEMOGRAPHIC QUESTIONNAIRE

I.D. # _____

INFORMATION SHEET

INSTRUCTIONS: Please complete this form by checking the appropriate boxes and filling in blanks where indicated.

1. Sex

☐ Male ☐ Female

2. Present grade level taught (specify as indicated)

☐ Elementary (grade level(s) _____)

☐ Middle/Jr. High (grade level(s) _____)

(Subject(s) _____)

☐ Senior High (grade level(s) _____)

(Subject(s) _____)

☐ Other (please specify position) _____

3. Years of teaching experience (completed as of the end of this year) _____ years

4. Highest degree earned

☐ Less than bachelor's degree

☐ Bachelor's degree

☐ Master's degree

☐ Specialist degree

☐ Doctor's degree

5. Have you ever been selected as a candidate for the

Teacher of the Year award? ☐ yes ☐ no

APPENDIX E
POST CARD ONE

Dear teacher,

October 15, 1990

I recently sent you a questionnaire requesting your personal response. Your opinion is vital to research! Please ignore the suggested return date and send your data as soon as you are able; it is desperately needed. If you need another packet, just write or call, and I will forward a copy immediately. Be assured that your participation is helping to instill greater understanding of the importance of the teacher to the future of society.

Gratefully,

Karen J. Agne

APPENDIX F
FOLLOW-UP LETTER

November, 1990

Dear Teacher,

Some weeks ago I invited you to participate in a nationwide study of teacher belief systems. I am pursuing this investigation, because I believe that the classroom teacher holds the key to future education reform.

I have not yet received your completed answer sheet. Your response is essential to this study; without it the results are sure to be less meaningful. I understand that this is a busy time for you, but there is no time when teachers are not busy.

The purpose of this letter is to again request your participation in this investigation. If you are willing to help, please drop the enclosed post card into the mail and allow me to send you another questionnaire.

If you have already mailed your data, or still plan to do so, please accept my gratitude for your participation and disregard this latest appeal.

Sincerely,

Karen J. Agne

APPENDIX G
POST CARD TWO

Dear Karen,

November, 1990

I choose to add my opinions to those of other teachers around the nation participating in your investigation of teacher belief systems.

Please send me a copy of the teacher belief questionnaire. I will complete and return the answer sheet to you as soon as I am able.

(Name) _____

(Address) _____

(City, state, zip) _____

APPENDIX H
DESCRIPTIVE STATISTICS ON MAIN EFFECTS FOR TOYs AND ITs

DESCRIPTIVE STATISTICS:		TOYs (88)		ITs (92)	
Variable	Mean	Std Dev	Mean	Std Dev	
Teacher Efficacy (Total)	43.00	10.01	40.49	10.09	
Teacher Efficacy	22.86	5.94	24.49	5.85	
Personal Efficacy	20.13	6.31	16.00	7.05	
Teacher Locus of Control	15.79	6.34	12.36	5.71	
Student Success	8.54	3.66	6.47	3.52	
Student Failure	7.36	3.36	5.78	3.29	
Pupil Control Ideology	44.70	8.69	50.72	9.66	
Teacher Stress	86.46	15.15	90.87	15.95	

Note: Pupil Control Ideology (Lower score = more humanistic)
Teacher Stress (Lower score = less stress)

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BIOGRAPHICAL SKETCH

Karen Joy (Mayhew) Agne was born on April 27, 1941, in Daytona Beach, Florida. She grew up in Orlando, Florida, the second of five siblings, and was graduated from Edgewater High School in Orlando in 1959.

Karen received an Associate in Arts degree from Concordia College in Austin, Texas, in 1961. Marriage moved her to the greater St. Louis metropolitan area, where she made her home for the next 20 years, raising two children, daughter Kori and son Darrin.

She began teaching kindergarten in 1967 in Belleville, Illinois. She also taught first grade in Belleville, before moving to Edwardsville, Illinois, to teach third grade and continue her education. Karen received both Bachelor of Science in Education and Master of Science in Education with a minor in fine arts degrees from Southern Illinois University in the same commencement in 1972. She continued with postgraduate work, accumulating 20 hours in her area of greatest interest, gifted education.

Karen continued teaching for the Edwardsville school district for the next 12 years, during which time she served as Gifted Instructional Specialist and was named 1984 Illinois Gifted Teacher of the Year, in addition to seeing

both children become college students, before returning home to pursue a doctoral program at the University of Florida.

In 1991, she received a Ph.D. in educational psychology from the Foundations of Education department, College of Education, of the University of Florida.

While attending the University of Florida, Karen was inducted into the Pi Lambda Theta National Honor and Professional Association in Education, the Kappa Delta Pi International Honor Society in Education, and the Phi Delta Kappa Professional Fraternity in Education. She is also a member of the American Educational Research Association.

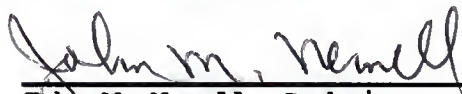
Karen plans to continue her dedication to teachers and to the better understanding of effective teaching and learning as a member of the education faculty of the State University of New York at Plattsburgh beginning in the fall semester, 1991.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



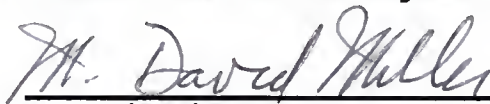
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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



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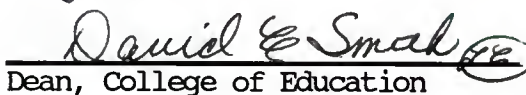
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This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August 1991



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Dean, College of Education

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